

Solid Waste Landfill Permit (Municipal, Industrial or C&D) Renewal, Major/Minor Modification/Variances (Form 439)

version 2.5

(Submission #: HQQ-DMYP-7A1YG, version 2)

Digitally signed by:
AEPACS
Date: 2026.08.10 14:34:00 -05:00
Reason: Submission Data
Location: State of Alabama

Details

Submission ID HQQ-DMYP-7A1YG

Form Input

Permit Information

Instructions

This form is intended to replace the submission of ADEM Form 439 for the reissuances, modifications, and variances of existing, permitted Solid Waste Disposal Facilities. For the reissuance of a permit, this form should be submitted at least 180 days prior to the expiration date of the current permit.

Applicable fees will be calculated through this form. Upon form submission, you will be provided with instructions to pay either online or through mail.

Please direct any questions to the listed contact for the Solid Waste Engineering Section.

Permit Number

66-03

Permit Type

Construction and Demolition Landfill (C/DLF)

Facility Name

Wilcox County Landfill

Permit Issue Date

04/14/2014

Permit Effective Date

04/29/2014

Permit Expiration Date

04/28/2019

Permit Actions

Are you an industrial facility only receiving waste generated on site only?

No

Is an updated Government Approval required by the selected permit action?

Yes

Updated Proof of Host Governmental Local Approval

Response to 10.9.25 Letter.pdf - 08/02/2026 08:04 PM

Comment

NONE PROVIDED

Estimated MSW Application Fee

0

Please select all actions being requested

C/D Renewal
C/D Minor Modification

Fee Breakdown (C/D)

Fee Type	Amount
C/D Major Modification	\$2,915
C/D Minor Modification	\$1,460
C/D Renewal	\$5,400
C/D Variance	\$1,460
Name Change/Transfer of Facility	\$800

Estimated C/D Application Fee

6860

If you are requesting a Facility Name Change or a Transfer of Ownership, please indicate the applicable option(s).

NONE PROVIDED

Cover Letter

Response to 10.9.25 Letter.pdf - 08/02/2026 08:04 PM

Comment

NONE PROVIDED

Facility Information

Size of Facility (acres)

18.60

C/DLF Disposal Area Size (in acres)

2.00

Proposed maximum average daily volume to be received at landfill

Volume	Unit
15.00	Cubic Yards/Day

List all waste streams to be accepted at the facility (i.e. household solid waste, wood boiler ash, tires, tress, limbs, stumps, etc.)

NONE PROVIDED

Identify proposed service area or specific industry that waste will be received from

NONE PROVIDED

Please provide a brief description of project and disposal area

This is a commercial and demolition landfill located in Wilcox County, Alabama just outside of Camden, Alabama.

Physical Facility Address

Highway 41 North
Camden, AL 36726

Facility County

Wilcox

Facility Location

32.01180000000000,-87.25109999999999

Highway 41 North, Camden, AL

Facility PLSS Information

Section	Township	Range
East ♦ of the Southeast ♦ of Section 15	12 North	8 East

Adjacent Land Owners Map

1 - BNDY & TOPO.pdf - 07/31/2026 09:04 AM

Comment

NONE PROVIDED

Permittee

Permittee/Applicant

Permittee, Business Entity, Corporation, or Government Entity
Wilcox County Commission

Phone Type	Number	Extension
Business	334-682-9112	

Email
willcoengr@gmail.com

Mailing Address

P.O. Box 488
Camden, AL 36726

Is permittee a corporation?

No

Does the permittee own the property?

Yes

Contact Information

Facility Contact

Prefix

Mr.

First Name	Last Name
Jody	Camp

Title

County Engineer

Organization Name

Wilcox County Commission

Phone Type	Number	Extension
Business	334-327-6370	

Email
willcoengr@gmail.com

Mailing Address

Post Office Box 488
Camden, AL 36726

Mailing Contact

Prefix

Mr.

First Name	Last Name
Jody	Camp

Title

County Engineer

Organization Name

Wilcox County Commission

Phone Type	Number	Extension
Business	334-327-6370	

Email
willcoengr@gmail.com

Mailing Address

PO Box 488
Camden, AL 36726-0490

Responsible Official

Prefix

Mr.

First Name

William

Last Name

Albritton

Title

NONE PROVIDED

Organization Name

Wilcox County Commission

Phone Type**Number****Extension**

Business

334-412-3796

Email

NONE PROVIDED

Mailing Address

P.O. Box 488

Camden, AL 36726

Do you want to provide additional contacts?

Yes

Additional Contacts (1 of 1)

Additional Contact: Luke Porter

Contact

Prefix

Mr.

First Name

Luke

Last Name

Porter

Title

P.E., Co-Founder

Phone Type**Number****Extension**

Mobile

2054429013

Email

luke@porterhigginbotham.com

Mailing Address

102 Temple Avenue South

Fayette, AL 35555

Siting Standards

Rule 335-13-4-.01 - Landfill Unit Siting Standards

New or existing landfill units shall comply with the following standards in order to prevent adverse effects on health or the environment. As part of the application, the owner/operator must submit documentation addressing to the satisfaction of the Department the following siting standards.

<https://admincode.legislature.state.al.us/administrative-code/335-13-4-.01>

If there are any modifications to documents previously submitted, please indicate and explain in the comments section of each respective document attachment.

Do you intend to expand the site boundary?

No

Do you intend to expand the disposal area?

No

Location Standards

(a) A facility located in a floodplain shall not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste, so as to pose a hazard to human health and the environment.

[5 - Surface Drainage.pdf - 08/10/2026 01:55 PM](#)

Comment

NONE PROVIDED

(b.1) A facility shall be located in consideration of the following: facility shall not jeopardize the continued existence of endangered or threatened species protected under the Endangered Species Act of 1973.

(b.2) A facility shall be located in consideration of the following: The facility shall not result in the destruction or adverse modification of critical habitats protected under the Endangered Species Act of 1973.

(b1) and (b2) Attachments

[Endangered Species Letter to ADEM.pdf - 08/10/2026 01:53 PM](#)

Comment

NONE PROVIDED

Is the siting within 10,000 ft of an airport runway end?

No

(c) A MSWLF unit shall not be sited within 10,000 feet of any airport runway end. Owners or operators proposing to renew existing or site new MSWLF units located within a five-mile radius of any airport runway must notify the affected airport and the Federal Aviation Administration (FAA).

Please upload two separate attachments for notifying (1) the affected airport(s) and (2) the Federal Administration (FAA) or provide proof that the site is not within 10,000 feet of an airport.

Affected airport(s) and the Federal Aviation Administration (FAA) Notifications

[Site Location Map.pdf - 08/10/2026 01:56 PM](#)

Comment

NONE PROVIDED

(d) Zones of active faults, seismic impact zones, and unstable areas shall be avoided in locating facilities and practices unless a site specific evaluation as described below, demonstrates minimum potential for adverse effects upon waters of the State.

- **(d.1)** Site specific evaluations for geology and hydrology shall comply with 335-13-4-.11 through 335-13-4-.14.
- **(d.2)** Site specific evaluation shall include minimum design parameters necessary to protect the waters of the State and human health and include minimum requirements of 335-13-4-.15 through 335-13-4-.24.
- **(d.3)** Landfill units shall not be located within 200 feet of a fault that has had displacement within the Holocene epoch unless the owner or operator demonstrates to the Department that an alternative setback distance of less than 200 feet will not result in damage to the structural integrity of the facility and will be protective of human health and the environment.
- **(d.4)** Landfill units shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Department that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

- **(d.5)** Landfill units shall not be located in an unstable area unless engineering measures have been incorporated in the design of the facility to ensure that the integrity of the structural components of the facility will not be disrupted. The following factors, at a minimum, must be considered when determining whether an area is unstable:
 - **(d.5.i)** On-site or local soil and subsurface conditions that may result in significant differential settling;
 - **(d.5.ii)** On-site or local geologic or geomorphologic features; and
 - **(d.5.iii)** On-site or local human-made features or events (both surface and subsurface).

Section (d) Attachments

[13507 66-03 131 10-03-2023 PERM CBH FINAL GW MONITORING PLAN - Final.pdf - 08/10/2026 01:58 PM](#)

Comment

NONE PROVIDED

(e) Landfill units shall not be located on a site that is archaeologically or historically sensitive as determined by the Alabama Historical Commission. Written certification must be provided from the State Historic Preservation Officer.

[Project_Review_Consultation_Form_revised_May 2021.pdf - 08/10/2026 01:59 PM](#)

Comment

Awaiting response from AHC.

Water Quality Standards

A facility shall be located so as to not adversely impact water quality by complying with the following:

- **(a)** A facility shall not cause a discharge of pollutants into waters of the State, including wetlands, that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), Alabama Water Pollution Control Act, Code of Ala. 1975, §§22-22-1 to 22-22-14 and/or section 404 of the Clean Water Act, as amended.
- **(b)** A facility shall not cause non-point source pollution of waters of the State, including wetlands, that violates any requirements of an approved wide and statewide water quality management plan that has been approved under the Alabama Water Pollution Control Act.
- **(c)** Landfill units including buffer zones shall not be permissible in wetlands, beaches or dunes.
- **(d)** Landfill units shall not be permissible in any location where the disposal of solid waste would significantly degrade wetlands, beaches or dunes.
- **(e)** Landfill units shall be located outside the boundaries of the coastal area, unless no other reasonable alternative is available. If a site within the coastal area is proposed for development as a landfill unit, it shall be demonstrated to the satisfaction of the Department that siting, design, construction, and operation will ensure that present levels of coastal plants and animals will be maintained.

Water Quality Standards Attachments (for Wetland Determination from the US. Army Corps - Recommended)

[2026-06-26 Survey Aerial.pdf - 08/10/2026 02:01 PM](#)

Comment

NONE PROVIDED

Water Quality Standards Attachments (for Hydrogeological Evaluation)

[13507 66-03 131 10-03-2023 PERM CBH FINAL GW MONITORING PLAN - Final.pdf - 08/10/2026 02:01 PM](#)

Comment

NONE PROVIDED

Groundwater Monitoring Report Requirements

Applicants seeking to obtain a permit to construct and/or continue to operate a municipal solid waste, industrial, or construction/demolition-inert (C/D) landfill are required to submit additional information as part of the Solid Waste Disposal Facility Permit Application. These additional information requirements vary depending on the facility type.

For new landfill units, refer to ADEM Admin Code 335-13-5-.02 for a list of additional information to be submitted in the permit application. Some requirements apply only to industrial landfills, while other requirements apply to C/D landfills. You need only to address the requirements that pertain to your type landfill.

The Department may waive certain requirements of facility design plans and operational procedures and technical data for those landfill units that will receive for disposal only construction and demolition type waste. A permit application for a C/DLF shall be submitted on a permit application form designated by the Department, which shall specify the minimum requirements for a complete application. The C/DLF permit application shall also include statements signed by a professional engineer and a representative of the facility owner/operator certifying that the information being submitted is accurate and correct. The submittal of false or inaccurate information shall result in the C/DLF permit application being suspended or denied.

Each rule that is applicable to your type landfill must be addressed in detail in the operational narrative and/or engineering drawings before the review process can be completed. All operational narratives, engineering drawings, survey maps and legal descriptions are to be prepared by licensed engineers or surveyors registered in the State of Alabama and with their stamp or seal on each drawing/map and cover of the narrative.

Code of Alabama 1975, § 22-27-48(b) states "The department may not consider an application for a new or modified permit for a facility unless such application has received approval by the affected unit of local government having an approved plan." This document must be received by the Department prior to processing the application.

The referenced rules are covered in greater detail in ADEM's Administrative Code, [Division 13](#). Clarification can be obtained by reviewing the regulations. Copies of the ADEM Administrative Code, Division 13 regulations, can be obtained for a fee by contacting ADEM's Permits and Services Division. If the Department can answer any questions, please contact the Solid Waste Branch at (334) 274-4201.

<https://admincode.legislature.state.al.us/administrative-code/335-13-5-.02>

If there are any modifications to documents previously submitted, please indicate and explain in the comments section of each respective document attachment. If there have not been any modifications to documents previously submitted, they will not be required for submission.

Proposed Statistical Method

Interwell

Proposed Well Information

Well ID	Upgradient or Downgradient?	Well Status
MW-1	Upgradient	Active
MW-2	Downgradient	Active
MW-3	Downgradient	Active
MW-4	Downgradient	Active

Supporting Documentation

If you are unsure whether any of these items are required for your application, please refer to ADEM Admin. Code [Division 13](#) or contact ADEM's Solid Waste Engineering Section.

If there are any modifications to documents previously submitted, please indicate and explain in the comments section of each respective document attachment.

Professional Engineer Signature

Certification of Compliance.pdf - 08/02/2026 08:05 PM

Comment

NONE PROVIDED

Closure Plan

Revised Plan of Operation.pdf - 08/10/2026 02:21 PM

Comment

NONE PROVIDED

Facility Design Plans

Revised Plan of Operation.pdf - 08/10/2026 02:23 PM

Comment

NONE PROVIDED

QA/QC plan

Revised Plan of Operation.pdf - 08/10/2026 02:22 PM

Comment

NONE PROVIDED

Operations Plan

Revised Plan of Operation.pdf - 08/02/2026 08:14 PM

Wilcox Explosive Gas Monitoring Plan.pdf - 08/02/2026 08:15 PM

Comment

NONE PROVIDED

Cell Information

Cell ID	Cell Type	Cell Description	Cell Status
Other	Construction and Demolition Landfill (C/DLF)	Example Row	Proposed
Cell 1	Construction and Demolition Landfill (C/DLF)	Closed	Certified
Cell 2	Construction and Demolition Landfill (C/DLF)	Current	Certified
Cell 3	Construction and Demolition Landfill (C/DLF)	Future	Proposed

Explosive Gas Monitoring Plan

13507 66-03 131 10-03-2023 PERM CBH FINAL GW MONITORING PLAN - Final.pdf - 08/10/2026 01:51 PM

Comment

NONE PROVIDED

Report of Explosive Gas Monitoring (add a row for each monitoring point in your permit)

Monitoring Point	Monitoring Point Description	Monitoring Point Status
Other	Culvert	Inactive
1	Bar/Hole Punch	Active
2	Bar/Hole Punch	Active
3	Bar/Hole Punch	Active
4	Bar/Hole Punch	Active
5	Bar/Hole Punch	Active
6	Bar/Hole Punch	Active
7	Bar/Hole Punch	Active
8	Bar/Hole Punch	Active
9	Bar/Hole Punch	Active
10	Bar/Hole Punch	Active
11	Bar/Hole Punch	Active
12	Bar/Hole Punch	Active

Revisions

Revision	Revision Date	Revision By
Revision 1	7/29/2026 2:29 PM	Stephen Porter
Revision 2	8/10/2026 10:49 AM	Stephen Porter

Agreements and Signature(s)

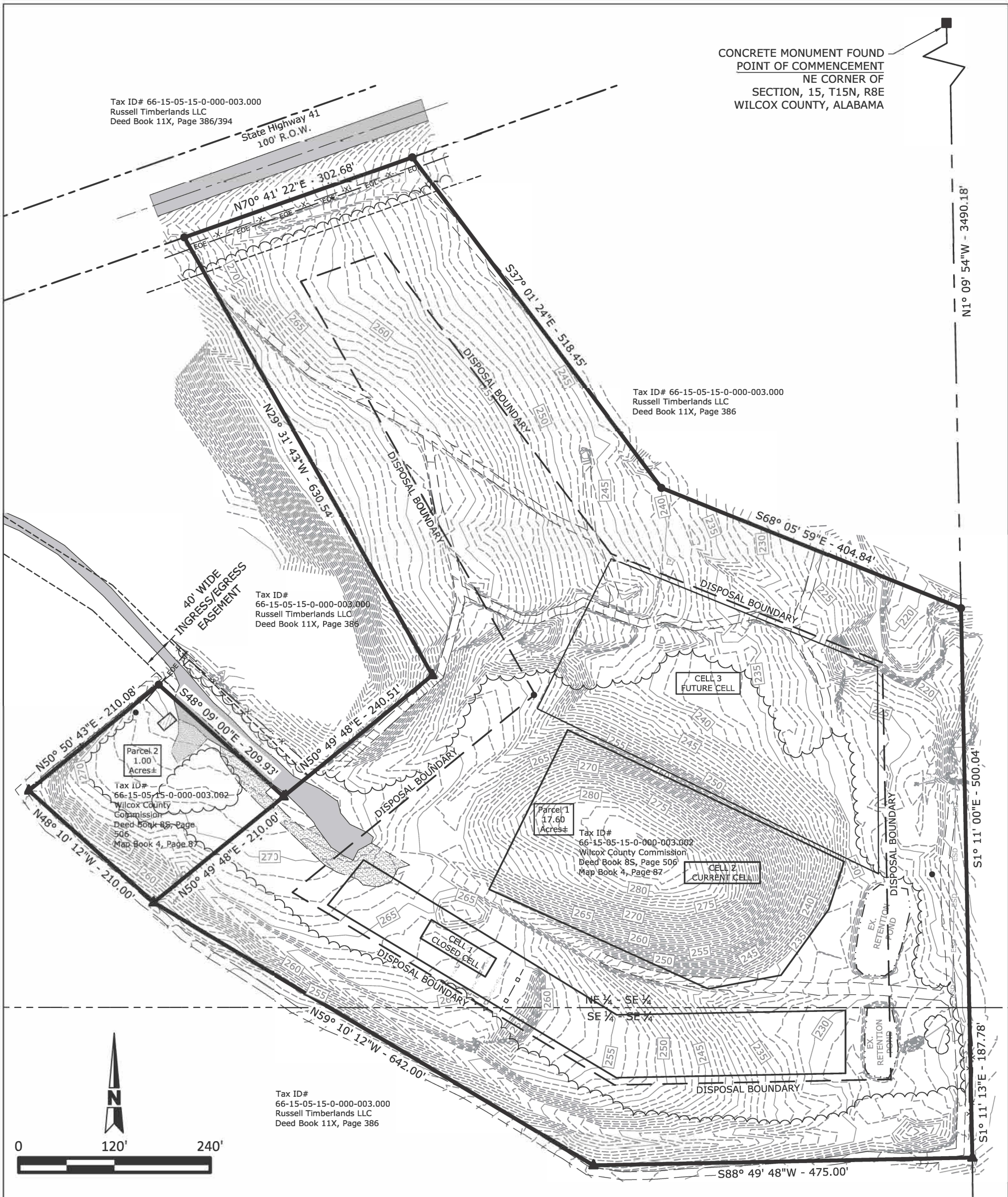
SUBMISSION AGREEMENTS

- ☒ I am the owner of the account used to perform the electronic submission and signature.
- ☒ I have the authority to submit the data on behalf of the facility I am representing.
- ☒ I agree that providing the account credentials to sign the submission document constitutes an electronic signature equivalent to my written signature.
- ☒ I have reviewed the electronic form being submitted in its entirety, and agree to the validity and accuracy of the information contained within it to the best of my knowledge.

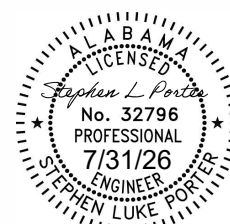
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed
By Stephen Porter on 08/10/2026 at 2:24 PM

CONCRETE MONUMENT FOUND
POINT OF COMMENCEMENT
NE CORNER OF
SECTION, 15, T15N, R8E
WILCOX COUNTY, ALABAMA



IRON PIPE / PIN FOUND	EX. BOUNDARY LINE	ESS	EX. SANITARY SEWER MAIN
CAPPED REBAR FOUND	EX. RIGHT-OF-WAY	EFM	EX. SANITARY SEWER FORCE MAIN
CONCRETE MONUMENT FOUND	EX. PROPERTY LINE	ESD	EX. STORM DRAIN
AXLE FOUND	EX. CHAIN LINK FENCE	EWM	EX. WATER MAIN
CAPPED REBAR SET	EX. IRON FENCE	EGM	EX. GAS MAIN
SEC SECTION	EX. WIRE FENCE	EOE	EX. OVERHEAD ELECTRICAL
T TOWNSHIP	EX. WOOD FENCE	EU P	EX. UNDERGROUND ELECTRICAL
R RANGE	EX. CONTOUR 5' INTERVAL	EUC	EX. UNDERGROUND CABLE TELEVISION
R.O.W. RIGHT-OF-WAY	EX. CONTOUR 1' INTERVAL	EO T	EX. OVERHEAD TELEPHONE
M.B.L. MINIMUM BUILDING LINE	EX. CONCRETE PAVEMENT	EUT	EX. UNDERGROUND TELEPHONE
PB. PLAT BOOK	EX. ASPHALT PAVEMENT		
DB. DEED BOOK	EX. GRAVEL DRIVE		
PG. PAGE			
EX. EXISTING			



APPROVED BY:
PORTER-HIGGINBOTHAM ENGINEERING, INC.

Stephen L Porter
LUKE PORTER, P.E. AL REGISTRATION NO. 32796

PHE # 26.012

EXISTING BOUNDARY AND TOPOGRAPHY

WILCOX COUNTY LANDFILL
PERMIT RENEWAL
WILCOX COUNTY, ALABAMA

07/2026
DRAWN BY: JRA

TUSCALOOSA
2009 PAUL BRYANT DRIVE
TUSCALOOSA, AL 35401
bruce@porterhiqinbotham.com Phone:(205)860-5198 (O)

FAYETTE
102 TEMPLE AVENUE SOUTH
FAYETTE, AL 35555
luke@porterhigginbotham.com Phone: (205)932-3478 (O)



PH
PORTER-HIGGINBOTHAM
ENGINEERING, INC.



SIDNEY H. MAY P.E., LLC.
CIVIL ENGINEERING, CONTINUING EDUCATION, & ENVIRONMENTAL PROFESSIONAL SERVICES

October 2023

Groundwater Sampling and Analysis Plan

#66-03 Wilcox County East Landfill
Camden, AL 36726



Prepared for the Wilcox County Commission

Professional Engineer Certification

The Alabama Department of Environmental Management (ADEM) Land Division Solid Waste Program 335-13-4-.14(1)c states that the Groundwater Sampling and Analysis Plan should be prepared in accordance 335-13-4-.27. I certify that this Groundwater Sampling and Analysis Plan for the Wilcox County East Landfill (#66-03) was prepared by me, a licensed Professional Engineer in the State of Alabama, or someone under my direct supervision pursuant to ADEM Admin. Code r. 335-13-4-.27.



Engineer Seal & Signature (Sidney H. May, P.E.)

10/03/2023

Date



Table of Contents

Professional Engineer Certification.....	i
Record of Plan Review.....	ii
Table of Contents.....	iii
1.0 Introduction.....	7
1.1 Regulatory Requirements.....	7
1.2 Purpose and Organization.....	7
1.3 Plan Review and Amendment Procedures.....	8
1.4 Site Description and Facility Overview.....	8
1.4.1 Groundwater Flow and Site Topography.....	9
1.4.2 Site Geology.....	9
1.4.3 Soils.....	10
1.4.4 Flood Risks.....	10
1.4.5 Seismic Activity.....	10
1.4.6 Threatened and Endangered Species.....	11
1.4.7 Archaeological Information.....	11
1.4.8 Monitoring Wells.....	11
1.4.9 Well Installation and Abandonment.....	12
1.4.10 Proximity to Public Water Supply.....	13
2.0 Groundwater Sampling.....	13
2.1 Preliminary Work.....	13
2.1.1 Facility Inspection and Access.....	14
2.1.2 Well Inspection.....	14
2.1.3 Water-Level Measurement.....	15
2.2 Well Purging.....	16
2.3 Sample Collection.....	17
2.3.1 General Considerations.....	18
2.3.1.1 Timing and Sequence of Sampling.....	18
2.3.1.2 Cleaning and Decontaminating.....	18
2.3.1.3 Calibrating Field Equipment.....	18



2.3.2 Sample Collection Methods.....	18
2.3.3 Sample Volumes and Sampling Containers.....	18
2.3.4 Sample Collection Procedures.....	19
2.3.4.1 Cleanliness.....	19
2.3.4.2 Filling Sample Containers.....	19
2.3.4.3 Labeling Sampling Containers.....	20
2.3.5 Quality Control Samples.....	20
2.3.6 Chain-of-Custody Documentation.....	20
2.3.7 Sample Storage and Transport.....	21
2.3.8 Documentation of Sampling.....	21
2.4 Hazardous Gas Monitoring.....	21
3.0 Groundwater Analysis.....	22
3.1 Laboratory Accreditation.....	22
3.2 Groundwater Analysis Requirements.....	22
3.3 Detection Monitoring Constituents.....	22
3.4 Assessment Monitoring Constituents.....	23
3.5 Test Methods.....	23
3.6 Reporting Analytical Results.....	23
4.0 Statistical Evaluation of Monitoring Data.....	24
4.1 Introduction.....	24
4.2 Statistical Database.....	25
4.2.1 Monitoring Wells and Historical Information.....	25
4.2.2 Statistical Database.....	25
4.3 Regulatory Requirements and Statistical Guidance.....	25
4.3.1 Regulations.....	25
4.3.2 Software.....	25
4.4 Assumption and Requirements of Statistical Tests.....	26
4.4.1 Statistical Independence.....	26
4.4.2 Screening and Reviewing of Data.....	27
4.4.3 Assessment of Normality.....	27
4.4.4 Assessment of Spatial Variation.....	27
4.4.5 Assessment of Outliers.....	28



4.4.6 Assessment and Use of Non-detects.....	29
4.4.7 The Double Quantification Rule (DQR).....	30
4.4.8 Assessment and Use of Trend Tests.....	30
4.4.9 Establishing and Updating Background.....	31
4.5 Detection Monitoring.....	33
4.5.1 Statistical Two-Sample Comparison by Upper Prediction Limit.....	33
4.5.2 Statistical Comparison of Compliance to Background.....	33
4.6 Assessment (Compliance) Monitoring.....	34
4.6.1 Condition of Assessment Monitoring.....	34
4.6.2 Statistical Comparison of Compliance to GWPS.....	34
4.6.3 Statistical Comparison of Compliance to Background.....	35
4.7 Corrective Action Monitoring.....	35
5.0 Monitoring Frequency.....	36
5.1 Background Monitoring.....	36
5.2 Detection Monitoring.....	36
5.3 Assessment (Compliance) Monitoring.....	37
5.4 Assessment of Corrective Measures.....	37
6.0 Reporting Requirements.....	38
6.1 Detection Monitoring Report.....	38
6.2 Annual Report.....	39
6.3 Assessment Monitoring Report.....	39
6.4 Corrective Action Report.....	39
7.0 Quality Control and Quality Assurance.....	40
7.1 Quality Objectives.....	40
7.2 Laboratory Quality Control.....	40
7.3 QA/QC Review and Verification.....	40
8.0 Facility Maintenance.....	41
9.0 References.....	42



APPENDICES

Appendix A: Facility Maps

Figure A-1: Site Location Map

Figure A-2: Aerial Map and Location of Wells

Figure A-3: Boundary and Topographic Map

Figure A-4: Geologic Map

Figure A-5: USDA Soil Map

Figure A-6: FEMA FIRMette Flood Map of Landfill Site

Figure A-7: Alabama Seismic Events Map (Wilcox County)

Figure A-8: Potentiometric Surface Map – Spring 2023

United States Department of the Interior Fish and Wildlife Service Letter

Appendix B: Photos of Monitoring Wells*

Appendix C: Monitoring Well Installation Data

Appendix D: Groundwater Sampling Forms

D-1: Sample Bottle Request Form (sample)

D-2: Chain-of-Custodies Form (sample)

D-3: Groundwater Sample Log (sample)

Appendix E: Standard Operating Procedures

Appendix F: Lab Certification and Accreditation

Appendix G: Compliance Standards

* Note: These photos were taken during site visits on 07/06/2021 and 2/25/23 and should be updated if there are any material changes to the site.



1.0 Introduction**1.1 Regulatory Requirements**

Municipal solid waste (MSW) landfills are potential sources of groundwater contaminants. Programs for monitoring of potential contaminants are governed by the State of Alabama under provisions set forth in the Alabama Department of Environmental Management (ADEM or Department) Land Division Solid Waste Program Admin. Code r. 335-13-4-.27 Groundwater Monitoring and Corrective Action.¹

Under these regulations, groundwater samples are collected and analyzed to determine if a potential contaminant has been released into the groundwater from materials deposited in the landfill. Statistical analyses are then performed on quantitative laboratory analytical data to provide an objective means for evaluating groundwater quality. These results are reported to the Department on an annual basis for further review and determination of monitoring and corrective action.

1.2 Purpose and Organization

This Groundwater Sampling and Analysis Plan (SAP or Plan) has been prepared for the Open Wilcox County East Landfill (#66-03) located in Camden (Wilcox County), Alabama on behalf of the Wilcox County Commission to be used as documented procedures for the Groundwater Monitoring Program required by ADEM.

The purpose of this plan is to provide an overview of the landfill and present site conditions; procedures for conducting sampling, monitoring, lab analytics, and statistical evaluation; reporting requirements; quality control and assurance; and facility maintenance for groundwater sampling and monitoring at the Open Wilcox County East Landfill. All groundwater sampling and monitoring activities at the landfill site shall be conducted in accordance with the regulatory requirements described above.



This Plan outlines the groundwater sampling activities of the Open Wilcox County East Landfill and has been organized by key elements required in an SAP in accordance with guidelines and procedures provided by ADEM.

1.3 Plan Review and Amendment Procedures

This plan shall be amended for the following reasons:

- When required by ADEM
- When regulatory requirements change
- Whenever there is a substantial change in the operation or maintenance procedures
- After review of the plan every five years
- Upon permit renewal

Technical amendments to this SAP shall be certified by a licensed Professional Engineer (PE) or licensed Professional Geologist (PG). The Wilcox County Commission shall keep a copy of this plan and all amendments in an accessible location. Amendments shall be noted on page ii (Record of Plan Review) of this Groundwater Sampling and Analysis Plan and updated as necessary.

1.4 Site Description and Facility Overview

The Wilcox County East Landfill is an open landfill located in Camden (Wilcox County), Alabama just off Alabama State Highway 41 (SR-41). This site is approximately 18.6 acres with two acres approved for disposal by ADEM. This facility is currently permitted to receive non-putrescible and nonhazardous construction and demolition (C/D) waste and rubbish as defined by Rule 335-13-1-.03, and tires.¹ The landfill is located in the East ½ of the Southeast ¼ of Section 15, Township 12 North, Range 8 in Wilcox County. A site location map showing the approximate location of the landfill is provided in **Appendix A (Figure A-1)**.

This landfill was initially intended to receive municipal solid waste (MSW) which consisted of household garbage, rubbish, and commercial solid waste (paper, wooden pallets, demolition waste, etc.) according to historical ADEM records between October 27, 1991, and April 8, 1994. As explained in the Engineer's Report² dated October 1989 and revised in May 1990, the landfill



was to contain five cells or trenches. Each trench disposal site contained a leachate pond, or basin, at its lower end to collect silt and leachate from the active cells with periodic sampling as required by ADEM and removal of sediments. One MSW cell and two leachate ponds were in active use during this time and by 1994, the solid waste cell was required to close. According to the Post-Closure Plan ³ prepared by Goodwyn, Mills, and Caywood, the estimated volume of waste was approximately 52,000 loose cubic yards (11,700 tons). This was based on an average daily delivery of 80 cubic yards (18 tons) per day over the 2.5-year life span of the landfill. The Wilcox County East Landfill was capped with a minimum of two feet, with the top six inches being capable of supporting vegetation. ³ The approximate location of the MSW cell is shown in **Appendix A (Figure A-2)**.

1.4.1 Groundwater Flow and Site Topography

The most recent topographic and boundary survey for the Wilcox East Landfill was completed in June 2023 by USA Surveying and Engineering, LLC. The topography and groundwater flow of the site can be best described as moving southeast according to the surface topography, previous groundwater monitoring reports which include water well measurements and potentiometric maps, and a site visit conducted in July 2021. The topographic and boundary survey is included in **Appendix A (Figure A-3)**, as well as a potentiometric surface map from the most recent groundwater sampling event conducted at the landfill in Spring 2023 (**Figure A-8**).

1.4.2 Site Geology

Geologic information was provided by the Geological Survey of Alabama (GSA) and from historic information about the site. According to published data, the surficial geology of this site is in the Porters Creek Formation (Tp), which is a part of the Paleocene series. Paleocene deposits in Wilcox County are from predominantly shallow marine and estuarine origin. The Porters Creek Formation consists of massive 100-200-ft calcareous clay with some sand and glauconitic sandstone. The fossiliferous Matthew Landing marl member at the top of the formation consist of micaceous silty sand, calcareous massive clay, and black massive clay. This formation dips to the south and overlies the Clayton Formation which is composed of a 220-ft thick limestone deposit. A Geologic Map is included in **Appendix A (Figure A-4)**.



1.4.3 Soils

Historic data was used to evaluate site soils. A subsurface investigation was conducted by Quality Assurance Testing Laboratories Inc. on February 4, 1988 and was included in the Engineer's Report. ² According to the subsurface investigation, soil samples were obtained from four soil boring locations on the site. The specific locations of the borings are not known. However, soils throughout the site were reported as tan clayey silt, light brown sandy clay, dark brown sandy clay, mottled tan/white clayey silt to dark gray clay with unified soil classifications determined by laboratory analysis to be MH, CH, SC, and CL.

Site soil information was also obtained from the United States Department of Agriculture (USDA) Web Soil Survey. According to published data, soil at the East landfill is described as Luverne Sandy Loam (LvF), Oktibbeha-Brantley complex (OtE2), and Saffell-Smithdale-Luverne complex (SaF). These soils generally consist of sand, silt, and clay mixtures and moderately well drained to well drained soils with a low frequency of flooding. A Soil Map is included in **Appendix A (Figure A-5)**.

1.4.4 Flood Risks

The risk of flooding was evaluated within and around the landfill site. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRMette), the Wilcox County East Landfill is located in Zone X. Zone X areas are areas determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRMette with the boundary of the landfill is included in **Appendix A (Figure A-6)**.

1.4.5 Seismic Activity

Seismic activity in the State of Alabama was evaluated from 1886 to 2021 and data was provided by the Geological Survey of Alabama (GSA). According to the data provided, there has been no known seismic activity in the county. A copy of the Seismic Events in Alabama is provided in **Appendix A (Figure A-7)** of this SAP.



1.4.6 Threatened and Endangered Species

Our team requested a list of threatened and endangered species within a 500-ft radius of the landfill site from the US Fish and Wildlife Services (FWS) on June 14, 2022. According to FWS the gopher tortoise (*Gopherus polyphemus*) is a species found in Wilcox County within or near the site. The Open Wilcox County East Landfill falls within the non-listed eastern range of the gopher tortoise's habitat. The species is not protected under the Endangered Species Act however, it is a species of concern or candidate species in Alabama. Species surveys are not required at this time for the gopher tortoise but will be if the species becomes federally protected.

The gopher tortoise typically burrows and has habitats in deep, well-drained, sandy soil in open forests or savannas according to FWS. If active burrows are identified within the landfill site, samplers, operators, and personnel should notify the appropriate state personnel and incorporate Best Management Practices (BMPs) to properly plan for its protection. Further recommendations are included in the response letter dated July 13, 2022, from the US Department of the Interior FWS in **Appendix A**.

1.4.7 Archeological Information

According to the Office of Archaeological Research at the University of Alabama, an archaeological survey was performed in 1988 to check for cultural resources within the landfill area. Based on their records, there are no previously recorded archaeological sites within the project boundaries nor within a 500-ft buffer.

1.4.8 Monitoring Wells

The Wilcox County East Landfill contains four monitoring wells (MW). Monitoring well-1 (MW-1) is the upgradient (background) well and is located just inside the entrance gate near the northwest corner of the landfill. MW-2, MW-3, and MW-4 are downgradient (compliance) monitoring wells. MW-2 is located near the southern boundary of the landfill and extends beyond the closed solid waste disposal cell. MW-3 is located near the eastern boundary of the site and MW-4 is located towards the northeastern boundary of the property. The location and elevations of the monitoring wells are shown in **Appendix A (Figure A-2)**. A site visit was conducted on



July 6, 2021 to evaluate the condition and accessibility of the monitoring wells. Pictures of each of the monitoring wells are included in **Appendix B** of this SAP.

According to historical records (Wilcox County Closure/Post Closure Plan) ³, the four monitoring wells were installed either in 1986 or 1987. Our team was able to locate information regarding the construction and installation of these wells in the Engineer's Report. ² Based on historical records, these wells have 4-inch diameter PVC casings and are screened the bottom 10-ft. The depth of the four monitoring wells is as follows:

- MW -1 (background or upgradient well): ~ 116.0-ft
- MW- 2 (downgradient well): ~ 89.29-ft
- MW-3 (downgradient well): ~ 60.34-ft
- MW-4 (downgradient well): ~ 62.91-ft

A copy of the monitoring well typical installation detail² is provided in **Appendix C** of this Groundwater Sampling and Analysis Plan.

During the Fall 2022 semiannual sampling event, an obstruction was discovered inside monitoring well MW-1 which prevented the possibility of collecting a sample. To remedy this issue, background monitoring well MW-1 was reinstalled as MW-1N in February 2023. However, while the new MW-1N was drilled and installed to the same depth as the original well, the static water level in MW-1N measured during the Spring 2023 sampling event was lower than the three downgradient monitoring wells. Because of this, MW-1N could not be utilized as part of the potentiometric surface map, site hydraulic conductivity, or groundwater velocity calculations. Sidney H. May, P.E., LLC is actively working with ADEM on a solution to this issue, which could potentially require the well to be re-drilled again. A boring log and well construction details for monitoring well MW-1N is included in **Appendix C**. This SAP will be updated accordingly as details regarding monitoring well MW-1/MW-1N become available.

1.4.9 Well Installation and Abandonment

Additional monitoring wells or wells that require replacement should be designed and constructed in accordance with procedures outlined ADEM Admin. Code r. 335-13-4-.27(2)(c).



There are no known monitoring wells that have been abandoned at the Open Wilcox County East Landfills based on historical information. However, if monitoring wells are abandoned the facility will follow the in ADEM Admin. Code r. 335-13-4-.27(2)(e).

1.4.10 Proximity to Public Water Supply

Information regarding the location of public water supply wells was provided by the the Wilcox County Water and Sewer District and historical ADEM records. According to the Wilcox County Water and Sewer District, surface water and well water is used to provide public water supply. Water is purchased from the City of Camden and Pine Hill. The Wilcox County Water and Sewer District utilizes the Oak Hill and Gees Bend Well to provide public water supply.

Historical ADEM records indicate that the City of Camden's water supply wells are located five miles southwest of the landfill site and are approximately 390 to 441 feet deep and screened in the Ripley Formation. The Hydrogeologic Site Evaluation ⁴ conducted by ADEM (January 18, 1994) stated that there were no water supply wells within a one mile radius of the Open Wilcox County Landfill. Our team was unable to reach the City of Camden to confirm the most recent public water well supply locations.

2.0 Groundwater Sampling

2.1 Preliminary Work

Preliminary work is required prior to each sampling event which consists of obtaining the proper materials and equipment needed to perform groundwater sampling prior to sampling, inspecting the wells, and obtaining water-level measurements prior to well purging and sample collection.

Materials needed to perform groundwater sampling include field logbooks, permanent black ink pens and markers, sample tags/labels, insulated cooler(s), blue ice, or an equivalent, and Ziplock™ bags. Sample containers are typically provided by the testing facility after a *Sample Bottle Order Form* has been submitted. An example of a *Sample Bottle Order Form* is included in **Appendix D** of this Groundwater Sampling and Analysis Plan. Chain-of-custody seals and a



Chain-of-Custody form are also provided by the testing facility. An example of the form is included in **Appendix D** of this SAP. The *Department of Environmental Protection (DEP) Form FD 9000-24 Groundwater Sampling Log (Groundwater Sampling Log)* is typically used when recording groundwater sampling well data and other information. An example of this form is included in **Appendix D** of this SAP. Personal Protective Equipment (PPE) which includes a safety vest, hat, shoes, eye protection, disposable gloves, the appropriate field attire, and insect, tick, and snake repellent should be obtained prior to field sampling.

Equipment that will be used for sampling should be evaluated prior to each groundwater sampling event. Equipment needed to obtain pH, conductivity, temperature, water-level, turbidity, and dissolved oxygen should be inspected, calibrated and properly functioning. Sampling equipment needed to obtain groundwater samples should be inspected, calibrated, and properly functioning prior to each sampling event.

All materials and equipment needed to collect groundwater samples are included in **Appendix E** in *Standard Operating Procedures I* of this Groundwater Sampling and Analysis Plan. These procedures should be evaluated and updated often to ensure that the most up-to-date technology and techniques are applied during groundwater sampling and monitoring.

2.1.1 Facility Inspection and Access

Access to the landfill is northwest of the site, off SR-41. Public access to the landfill facility should be limited according to the ADEM permit ⁵ requirements to mitigate unauthorized vehicles or use. The entrance is typically monitored during operating hours and kept locked when the landfill is closed. The landfill entrance gate, facility signs, and access road will be inspected prior to sampling events and Wilcox County will be notified if there are any deficiencies.

2.1.2 Well Inspection

The condition and integrity of each well should be inspected prior to each sampling event before groundwater well purging and sample collection. The following are minimum procedures for well inspection:



- The well casing, concrete pad, concrete collar, bollards, or other protective barriers should be inspected for cracks, fissures, or damage caused by equipment, animals, vandalism, etc.
- All monitoring well lids should have a lock that is functional. Samplers should inspect the well lid prior to sampling and ensure that it is locked. If the monitoring well lid is not locked, Wilcox County should be notified, and a functional lock should be obtained for future use. Any deficiencies should be noted and corrected prior to the next sampling event.
- The well cap should be present on top of the well casing and watertight. The sampler should inspect the well cap prior to sampling and ensure that the well cap is functional. If the well cap is missing or has been damaged, Wilcox County should be notified and a well cap that is watertight should be installed for future use. Any deficiencies should be noted and corrected prior to the next sampling event.
- Sprays, insect repellents, and other potential contaminants should not be used on or in the casing. Other organic lubricants should be avoided on other well components such as hinges or locks.

2.1.3 Water-Level Measurement

Water-level measurements should be taken prior to purging and sampling in accordance with ADEM Admin. Code r. 335-13-4-.27(2)(i)(1.). The equipment used to obtain water-level measurements should be calibrated and the calibration should be properly documented prior to taking water-level measurements. The depth of water should be measured for each sampling event. The depth to the bottom of the well (total depth) should be measured if unknown and at least every two years. All water-level measurements shall be taken from a clearly marked reference point and documented on the *Groundwater Sampling Log* for each well. An example of the *Groundwater Sampling Log* that will be used during sampling and monitoring is attached in **Appendix D**. The groundwater water rate and direction of flow will also be calculated for each sampling event. After water-level measurements have been taken, field personnel shall decontaminate the water-level indicator probe prior to use in other wells.



2.2 Well Purging

Well purging is a process that consists of removing stagnant water from the well prior to sampling. Purging allows for replacement groundwater from adjacent areas to refill the well so that actual aquifer conditions are represented.

There are several methods and technologies used to purge well with no single method being the most appropriate for all monitoring wells at a facility. These methods include low-flow purging, purging with a non-low-flow pump, and purging with a bailer. The preferred purging method that will be used for the monitoring wells at the Open Wilcox County East Landfill will be low-flow purging (low-flow/low-stress) to minimize drawdown, turbidity, and groundwater disturbance. The goal of this method is to ensure that samples are representative of actual groundwater conditions. Low-flow/low-stress techniques are based on the United States Environmental Protection Agency (EPA) publication Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures (April 1996).⁶

Purging procedures depend on the type of pump that will be used to sample groundwater, and this is dependent on well depth and other conditions. The most common type of pump that will be used at the Open Wilcox County East Landfill is peristaltic pump (depth-to-water is less than 25-ft). *Standard Operating Procedures I* for well purging for both pump types are included in **Appendix E** of this Groundwater Sampling and Analysis Plan.

Field parameters will be measured and recorded every three minutes. Field parameters include pH, temperature, specific conductance, dissolved oxygen (DO), turbidity, and oxidation reduction potential (ORP). Water-levels will be monitored in each well and pump rates will be adjusted to minimize drawdown. Wells will be purged until the well stabilizes and equilibrium conditions are met. The following chart represents the appropriate well stabilization criteria in accordance with EPA Guidelines.



Parameter	Stabilization Criteria	Reference
pH	+/- 0.1	Puls and Barcelona, 1996; Wilde et al., 1998
specific electrical conductance (SEC)	+/- 3%	Puls and Barcelona, 1996
oxidation-reduction potential (ORP)	+/- 10 millivolts	Puls and Barcelona, 1996
turbidity	+/- 10% (when turbidity is greater than 10 NTUs)	Puls and Barcelona, 1996; Wilde et al., 1998
dissolved oxygen (DO)	+/- 0.3 milligrams per liter	Wilde et al., 1998

Table 1: Stabilization Criteria with References for Water-Quality-Indicators Parameters
(Source: EPA Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers, 2002)

The Open Wilcox County East Landfill is surrounded by heavily wooded and vegetated areas, particularly in the closed section of the landfill. This landfill is remote with minimal development in adjacent areas. Consequently, purged groundwater is not stored and is disposed of on-site after sampling in a manner that limits adverse effects to the environment. The purged water typically infiltrates back into the ground surrounding the monitoring wells.

Purging techniques will be evaluated periodically to ensure that the most current and acceptable methods are being used at the landfill site. If low-flow/low-stress purging techniques are not used at this landfill for any reason, this Groundwater Sampling and Analysis Plan should be updated with alternate purging technique(s).

2.3 Sample Collection

Physical or chemical changes can occur in groundwater samples if sampling devices, collection procedures, preservatives, temperature controls, or shipping methods used are inappropriate or inadequate. Once well conditions have stabilized, the flow rate at the pump will be reduced as necessary. The pump flow rate should be the same or less than the purge rate in the wells to minimize aeration.



2.3.1 General Considerations

2.3.1.1 Timing and Sequence of Sampling

The elapsed time between purging and sampling should be as short as possible to ensure minimal variations in groundwater readings. Sampling will commence immediately or within a reasonable time following well purging at the landfill. The well will be allowed to recover to 90 percent of the level that existed prior to purging before samples are collected. Water-levels will be measured prior to sampling.

The sequence of sampling should begin with the least contaminated well which is assumed to be the upgradient well, MW-1.

2.3.1.2 Cleaning and Decontaminating

Non-dedicated equipment will be decontaminated using distilled water after sampling from each well. Sample bottles, disposable gloves, and tubing will not be re-used.

2.3.1.3 Calibrating Field Equipment

Field equipment including water-level measuring device and water quality indicator parameters will be calibrated prior to each sampling event in accordance with the manufacturer.

2.3.2 Sample Collection Methods

Groundwater will be collected using low-flow/low-stress methods during purging and sampling. This method helps controls turbidity and delivers a higher-quality sample. Pumps will be utilized to collect water samples. The pump flow rate during sampling should be the same or less than the purge rate in the well to minimize aeration. Pump flow rates will be carefully monitored and adjusted as necessary.

2.3.3 Sample Volumes and Sampling Containers

The sample volumes and types of sampling containers depend on the constituents that will be analyzed at the landfill. Sample bottles are pre-ordered utilizing a *Sample Bottle Order Form* provided by the laboratory testing facility similar to what is included in **Appendix D** of this SAP. EPA recommends the following for each type of constituent analyzed:



- VOC (volatile organic compounds) – use two 40-mL glass vials (or lab specified alternate) with special caps with Teflon® septa, pre-preserved by the lab. The septum must be correctly placed with the Teflon® side toward the sample.
- SVOC (semi-volatile organic compounds) – use a one-liter glass container
- Metals – use laboratory-provided polyethylene or glass containers that contain the necessary preservatives.
- Inorganic compounds – use laboratory-provided polyethylene or glass containers

2.3.4 Sample Collection Procedures

2.3.4.1 Cleanliness

Clean sampling equipment should be kept on top of plastic sheeting or in a manner to prevent contamination. Direct contact with the ground should be avoided. The surrounding area should be checked for any possible sources of air contamination and should be noted on the field logs.

Water samples should be collected as close to the wellhead as possible. The sampling device should not touch the sampling container but should be as close as possible.

The first portion of water taken from the well will be not used during sampling to help ensure the most accurate representative of water is sampled.

2.3.4.2 Filling Sample Containers

Sample containers should be filled in order of volatilization sensitivity. The samples will be collected in the following order from most to least volatile:

- VOCs
- SVOCs
- Metals
- Other Organic Constituents

The water stream should be allowed to flow down the inner walls of the vial to minimize air bubble formation when filling VOC containers. The containers should be overfilled slightly so



that the vial has a positive meniscus. The cap should be screwed on carefully to avoid any space for air in the vials.

All other sample containers should be filled in a manner to prevent any contamination to the sample and properly sealed, bubble-wrapped or prepared to prevent damage during transport, and packed tightly in the insulated cooler after filling the sample containers.

2.3.4.3 Labeling Sampling Containers

Sample containers are typically labeled by the laboratory testing facility prior to each sampling event according to the type of analyses performed. Information included on the labels consist of, but is not limited to, facility identification, well number, analysis to be performed, and preservatives used. If sample containers are not pre-labeled, the sampler should write the information on the label with permanent ink and cover the label with transparent tape to protect the information.

2.3.5 Quality Control Samples

Trip blanks are used to ensure quality control of samples. These are necessary to determine whether a sample has been contaminated from other sources before or during sampling or if sample shipping, handling, and storage have had an impact on the sample integrity. Trip blanks are laboratory-prepared samples of reagent-grade or distilled water that is provided with the set of VOC sample jars and transported to and from the landfill site in the same manner as the sample containers.

2.3.6 Chain-of-Custody Documentation

Chain-of-custody (COC) documentation must accompany the samples for each sampling event as a step from the field to the laboratory. Each party handling the samples from the sampler to the laboratory representative must sign the document except for commercial transporters such as UPS, FedEx, or USPS. Typically, the laboratory testing facility will provide the COC form with the empty sample bottle shipment. An example of a *Chain-of-Custody* form is provided in **Appendix D**.



The sampler starts the COC procedures by completing the required information on the COC document such as the name of the sampler and address, project name or number, collection date and time, and the requested analyses. The individuals relinquishing and receiving the samples should sign, date, and note the time of transfer on the COC form. A completed COC form should be placed inside the insulated cooler in a sealed bag so as not to cause damage to the form. A copy of the COC should be included in Groundwater Monitoring Reports.

2.3.7 Sample Storage and Transport

Samples should be kept cold and should be transported to the laboratory facility as soon as possible, preferably within 24 to 48 hours of sampling. Samples should be wrapped in resealable plastic bags or bubble wrap and placed in an insulated hard-sided cooler. Ice, coolers, blue ice, or an equivalent material should be contained in the cooler to keep the samples at the ideal temperatures. Dry ice should not be used to chill the samples. Blanks and chain-of-custody documents (**Appendix D**) should be packed in the insulated cooler with samples. The insulated cooler should be tightly packed with as little extra air space as possible and thoroughly sealed with shipping tape and shipped. Mailed packages should have tracking numbers to allow for location of the shipment.

2.3.8 Documentation of Sampling

All required information related to each groundwater sampling event shall be bound in a permanent field logbook. Any entries made shall be in permanent black ink. Entry errors should be crossed out with one single line, dated, and initialed by the person making the corrections. Location, date, time, weather conditions, identity of sampling personnel, all field measurements, and any comments regarding well conditions and integrity should be included in the field logbook in a manner such that there is sufficient information for the sampling situation to be reconstructed for legal purposes or other reasons as necessary. Field logbooks should be kept in a safe place.

2.4 Hazardous Gas Monitoring

Hazardous gas monitoring will be conducted annually for the facility unless otherwise required by ADEM. According to historical records, there are existing hazardous gas monitoring locations



at the landfill facility. These locations will be utilized to conduct hazardous gas monitoring at the facility.

3.0 Groundwater Analysis

3.1 Laboratory Accreditation and Certification

Accreditation and certification are required to conduct environmental testing and laboratory analyses of groundwater. A contracted laboratory facility will be used to perform the groundwater analysis at the Open Wilcox County East Landfill. Our firm will utilize Pace Analytical Services, LLC. ("Pace Analytical") to conduct the analyses. If this changes, this SAP will be updated, and the lab facility will submit documentation describing lab procedures through standard operating procedures (SOPs) and the appropriate methods will be followed. Accreditation and certification will be obtained for all future contracted laboratory facilities that provide groundwater analysis at the landfill. The latest copy of Pace Analytical's permit, accreditation, certification, compliance action, corrective action, etc. is included in **Appendix F** of this SAP. This information will be updated as necessary.

3.2 Groundwater Analysis Requirements

ADEM requires Groundwater Monitoring Programs to include consistent groundwater sampling and analysis procedures. Sampling procedures and requirements were discussed previously in **Section 2.0 Groundwater Sampling**. Analysis procedures are designed to ensure accurate representation of groundwater quality at all monitoring wells. Analysis procedures and compliance are the responsibility of the contracted laboratory and shall be maintained in accordance with ADEM and EPA requirements.

3.3 Detection Monitoring Constituents

Currently, ADEM requires the facility to conduct annual detection monitoring. The Open Wilcox County East Landfill will conduct sampling and analyses for the constituents listed in Appendix I for all groundwater monitoring wells unless otherwise required by ADEM. A list of Appendix I constituents is provided in ADEM Admin. Code r. 335-13-4-App I. Samples from each well



(background and downgradient) will be collected and sent to the laboratory facility for analyses in accordance with ADEM and EPA requirements.

3.4 Assessment Monitoring Constituents

According to ADEM Admin. Code r. 335-13-4-.27(4), assessment monitoring is required whenever a statistically significant increase (SSI) over background has been detected for one or more constituent listed in Appendix I. The Open Wilcox County East Landfill will conduct assessment monitoring if an SSI over background has been detected or if required by the Department. The facility will sample from Appendix II constituents included in ADEM Admin. Code r. 335-13-4-App II or an alternative list as required by the Department.

3.5 Test Methods

Groundwater samples will be analyzed using analytical methods that accurately measure hazardous constituents in groundwater samples. These methods selected should be consistent with the latest edition of the EPA-recommended procedures included in Test Methods for Evaluating Solid Waste ⁷ (EPA publication SW-846); Standard Methods for Examination of Water and Wastewater ⁸ (a joint publication between the American Public Health Association, the American Water Works Association, and the Water Environment Federation); and the Chemical Analysis of Water and Waste ⁹ (EPA publication).

3.6 Reporting Analytical Results

Analytical results for groundwater samples of monitoring wells will be reported using a practical quantitation limit (PQL). Any statistical method used to evaluate groundwater monitoring data will account for data below the limit of detection with one or more statistical procedure that is protective of human health and the environment. Any PQL used in the statistical method will be the lowest concentration level reliably achieved within the specified limits of precision and accuracy for routine laboratory operation conditions.

PQLs for each constituent must be equal to or below the groundwater protection standard (GWPS) established for Appendix I or II constituents unless otherwise specified by the Department. The contracted laboratory facility will have to demonstrate if the method and



procedures used in the analyses can attain a PQL at or below the GWPS. The laboratory will report non-detect results as less than the PQL value.

The contract laboratory shall submit a Laboratory Case Narrative (LCN) for all problems and anomalies observed in addition to a laboratory report, which will include information such as sample results with a report of the constituents analyzed, the analytical methods, the laboratory PQLs, chain-of-custody, the reporting limit (RL which is the lowest concentration above the adjusted method detection limit and below the adjusted reporting limit), dilution factor (DF which is the factor applied to the reported data due to dilution of the sample aliquot), and other qualifiers.

4.0 Statistical Evaluation of Monitoring Data

This section was prepared by Dr. Scott Brande (Alabama P.G. #415) utilizing the EPA 2009 Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance (U.S. EPA, 2009).¹⁰

4.1 Introduction

An objective means for evaluating groundwater quality is provided by applying statistical procedures to quantitative laboratory data. A statistical assessment of data is used to determine if levels or changes in groundwater quality are significant and require additional action as provided for in the ADEM Administrative Code. Guidance for and descriptions of applicable statistical procedures is provided in the U.S. EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, (USEPA, 2009).¹⁰ Unified Guidance will be used at the Open Wilcox County East Landfill.

This section of the SAP describes strategies and procedures for the analyses of groundwater analytes from the landfill. The section also describes means to establish and update constituent background limits, and conduct statistical assessments during detection monitoring, assessment monitoring (if required), and corrective action (if required).



4.2 Statistical Database**4.2.1 Monitoring Wells and Historical Information**

As stated previously, groundwater at the facility is currently monitored through four wells. Historical well designations are MW-1, MW-2, MW-3, and W-4. MW-1 (now MW-1N) is designated the upgradient well. MW-2, MW-3, and MW-4 are designated downgradient monitoring wells.

4.2.2 Statistical Database

The statistical database consists of field and laboratory data for constituents sampled in groundwater from the monitoring wells at the facility. The database of historical data was obtained from previous analysts.

4.3 Regulatory Requirements and Statistical Guidance**4.3.1 Regulations**

Statistical procedures and methods used to analyze groundwater monitoring data are guided by regulations in ADEM Division 13 Land Division - Solid Waste Program. ¹ ADEM regulation 335-13-4-.27 provides for various tests that may be employed for statistical analysis of groundwater analytes (parametric comparisons, non-parametric comparisons, interval, control chart, or other methods), provided that the "...statistical method used ... shall be appropriate for the distribution of chemical parameters or hazardous constituents" (335-13-4-.27(m)(1). Guidance for specific statistical tests for data is taken from Unified Guidance.

For statistical tests, the Type I error level is set to 0.01 (confidence coefficient of 99%) for comparison of a constituent concentration in an individual well with the background well constituent concentration in accordance with 335-13-4-.27(m)(2).

4.3.2 Software

One or more commercially available programs will be used to compile, analyze, and report results from the statistical analyses of groundwater monitoring data.



Primary software for statistical analysis is Sanitas (version 10),¹¹ an integrated system of methods for the statistical analysis of groundwater quality data from RCRA hazardous waste (Subtitle C) and municipal (Subtitle D) landfills (Sanitas Technologies, 2022).

Other software that may be used for screening and/or statistical review includes Excel (Microsoft Office 365, version 16), ProUCL (version 5.1),^{12, 13} and Minitab (version 21).

4.4 Assumptions and Requirements of Statistical Tests

The validity of results of a statistical test is based in part on the degree to which the data satisfy assumptions of the test. For some parametric statistical tests, one assumption presumes the sample of data are drawn from a normally distributed dataset. An alternative procedure in the event of a violation of the normality assumption is the transformation of sample data to normality prior to the use of a parametric test that requires normality. If sample data are evaluated as non-normal, an alternative class of tests, non-parametric, may be used.

Data are first screened and reviewed prior to statistical testing. Several assumptions are common to multiple statistical tests, and these are discussed below.

4.4.1 Statistical Independence

Statistical independence is achieved when two samples of groundwater are collected on different dates and are separated by an amount of time such that the samples are drawn from different volumes of water. This assumption is dependent upon various factors, one of which is the rate at which groundwater flows.

An annual sampling program is typically presumed to provide enough time based on groundwater flow to ensure physical, and thus statistical independence. Shorter intervals of time between sampling events may also result in physical and statistical independence.

For the purposes of statistical analysis, it is presumed that all data when sampled at the monitoring wells represent both current groundwater conditions and samples that are statistically independent.



4.4.2 Screening and Reviewing of Data

Prior to statistical comparisons, data for each constituent at each well is tabulated, plotted, and reviewed. The following types (among others) of data displays are available for screening and review.

- Data summaries in tables include but are not limited to sample date, tallies of the number of observations, number of non-detects, percentage of non-detects, and summary statistics (e.g., mean, median, standard deviation, coefficient of variation and skewness).
- Time-series plots provide an initial visual screen for trends across time and location and the presence of possible outliers. Plotted values are followed by their tables of observations.
- Box plots represent variation of data distributions within and among wells that aid in evaluating normality, outliers, and other features of distributions. Box plots are included for all constituents at all wells (upgradient and downgradient).

4.4.3 Assessment of Normality

The distribution of analytes in groundwater may assume many different forms depending on, for example, the stratigraphic sequence and composition of geologic layers, and the physical and dynamic conditions of an aquifer.

Statistical procedures have been developed for data distributed as normal and as non-normal. Parametric comparisons and procedures for normally distributed datasets are generally preferred for larger samples and when the hypothesis of a normal distribution cannot be disproven. The property of normality of the distribution based on a sample is assessed by the Shapiro-Wilk ($n \leq 50$) or Shapiro-Francia test ($n > 50$). Transformations are made to data, when possible, to achieve normality. In the event normality of datasets cannot be attained, non-parametric procedures are utilized.

4.4.4 Assessment of Spatial Variation

Even in the absence of groundwater contamination, groundwater quality may vary significantly with location due to such factors as spatial variation in the occurrences of minerals and soil.



The Department requires that each constituent at each monitoring well (constituent-well pair) be evaluated separately. The concentration of one constituent at a particular downgradient well is compared to the same constituent concentration at the upgradient well.

This facility has at present only one upgradient well. Statistical comparisons on background well data alone are of the intrawell type (described in **Section 4.4.9 Establishing and Updating Background**). There is no spatial variation present within the upgradient well dataset as all samples are drawn from the same location.

Spatial variation among multiple downgradient wells is not assessed as regulations require the statistical testing of the concentration of each constituent in each downgradient well with the concentration of the same constituent in the upgradient well (constituent-well pair).

4.4.5 Assessment of Outliers

Many different factors may control the concentration of a potential groundwater contaminant at the time of sampling. When multiple factors act independently, a sample distribution will likely exhibit many values that cluster about a central measure (e.g., mean or median) and also exhibit some values that lie far from the central measure. Values that may come from a distribution not representative of the other data are termed outliers.

Outliers are of concern because they may originate from a population distribution other than the one from which the constituent is sampled and thus bias statistical summaries and results of statistical tests (Unified Guidance, Chapter 7). Outliers may be due to such factors as errors of transcription of field and or laboratory measurements or reports, a singular environmental event (e.g., drought or deluge), sampling equipment, or a locally controlled release of a contaminant.

The Unified Guidance reviews outliers (Chapter 6) and recommends statistical comparisons for their identification (Chapter 12). Statistical comparisons for outliers are selected according to the distribution of data: parametric methods for normal data, and non-parametric methods for non-normal data. When data are normally distributed, depending on sample size, Dixon's test ($n <$



26) (Unified Guidance, Section 12.3) or Rosner's test ($n > 25$) (Unified Guidance, Section 12.4) may be used.

When data are determined to be non-normal, possible outliers are visually screened by evaluation of Tukey's box-and-whisker plots, and by the calculation of Tukey's thresholds based on the Interquartile Range (IQR) (Unified Guidance, Section 12.2). Thresholds for identifying outlier values are calculated as three times the IQR above the 75th percentile or less than the 25th percentile of the distribution. Values that exceed these upper and lower thresholds are designated as extreme.

In this SAP, an assessment for the detection and identification but not necessarily the removal of extreme outliers, is based on Tukey's IQR method and the use of the 75th percentile and 25th percentile threshold limits. Because information that might identify the cause of an outlier may be missing or impossible to infer, the Unified Guidance is hesitant about the removal of an outlier from a dataset (Unified Guidance, Chapters 6, 12). However, in the case of an extreme value, outlier removal is permitted with justification. Extreme outliers may be, but are not necessarily, excluded from statistical analysis based on professional judgment. However, any extreme values identified remain in the database and are re-evaluated with the addition of each new sample collection.

4.4.6 Assessment and Use of Non-detects

Non-detects represent concentration values of constituents reported by the analytical laboratory as falling below a reliable practical quantitation limit of laboratory analyses.

The Unified Guidance (Chapter 6) notes that the presence of non-detects in a sample of observations should be considered when selecting appropriate statistical tests, such as the reporting of summary statistics, the decision to use parametric or non-parametric methods, the type of data transformation to normality (if possible), and the detection and treatment of outliers. General guidelines for the treatment of non-detects in the statistical analyses of a sample of data of an individual constituent from a single well include the following (Unified Guidance, Section 7.4.5).



- $ND\% = 100\%$. No statistical analyses are required.
- $100\% > ND\% \geq 50\%$. Statistical procedures should be chosen from non-parametric methods.
- $50\% \geq ND\% \geq 15\%$. Kaplan-Meier adjustments are made to procedures, such as for estimating means and standard deviations.
- $ND\% < 15\%$. Non-detects are replaced by a value equal to one-half the laboratory reporting limit specified by the laboratory (Unified Guidance, Chapter 15).

4.4.7 The Double Quantification Rule (DQR)

If all constituent concentrations in a monitoring well dataset are reported as non-detect (100% non-detects), no statistical test to evaluate the distribution of the constituent is available and none is required.

The Unified Guidance (Chapter 6) suggests the Double Quantification Rule for evaluating a “never-detected” constituent if it is detected in future samples.

“A confirmed exceedance is registered if any well-constituent pair in the ‘100% non-detect’ group exhibits quantified measurements (i.e., at or above the reporting limit [RL] in two consecutive sample and resample events.” (Unified Guidance, p. 6-11). In this case, an SSI is declared for that constituent.

4.4.8 Assessment and Use of Trend Tests

Concentrations of constituents may vary over time in diverse ways, including increases, decreases, or relative stability (variation about a central value). The Unified Guidance provides an overview of trends and their statistical tests (Chapters 14, 17). Different trend test procedures are available to identify increases, decreases, or stationary variation within a dataset; the results of which can be helpful in evaluating and establishing historical background and a change in the concentration of a constituent over time. A preliminary review of data for the presence of trends is made by inspection of data in a time-series plot.



One approach to correcting a dataset for a trend is to truncate (de-select) values prior to a date when it can be shown that the two intervals of data represent different populations. In this case, truncation of earlier data leaves the more recent data as better representatives of current groundwater conditions at the specified well compared to the historical data.

Another approach to assessing trends is based on the parametric method of linear regression which may be used when its assumptions are satisfied. These assumptions include but are not limited to approximately normally distributed residuals, constant variance, statistical independence, lack of skewness, and a lack of outliers. Standard linear regression methods do not account for non-detects or missing values. In the event of a significant trend, data may be corrected for by de-trending a linear regression and analyzing its residuals.

One or more of these assumptions are common violations of groundwater monitoring datasets, in which case the non-parametric methods of the Mann-Kendall test for trend and Theil-Sen trend line may be used. The Mann-Kendall procedure tests for the statistical significance of a trend, and the Theil-Sen method computes the trend line.

4.4.9 Establishing and Updating Background

One or more groundwater monitoring wells are designated as background when samples represent water quality that are not site-related or impacted by facility activities. Water samples from background monitoring wells are used to establish levels of constituents against which downgradient well samples are compared.

Because background water quality may vary spatially and temporally, statistical characterization of background constituent concentration is updated periodically. Guidelines for updating the background well are provided in the Unified Guidance (Chapter 5). A minimum of four independent samples constitutes the minimum number of new samples used in updating the background well, although larger samples are recommended. The Unified Guidance recommends updating background every two to three years. Four years of annual sampling produce the minimum number of four new samples required for updating background.



Prior to updating constituent concentrations in samples from the background well at this facility, data are screened for non-detects, normality, outliers, and other requirements depending on the statistical test.

The Unified Guidance (Chapter 5) identifies two-sample comparison statistical tests for updating background. The two groups of data for updating background are historical data and newer data, respectively, with the latter being tested for inclusion in the updated background dataset. The newer data include at minimum the most recent four samples or a truncated dataset. The historical data include all data prior to the most recent four samples. The Unified Guidance recommends the class of tests based upon the degree to which data satisfy assumptions of the test: parametric (e.g., Student's t-test, Welch's t-test) or non-parametric (Wilcoxon rank-sum test is also referred to as the Mann-Whitney test) (Unified Guidance, Chapter 16).

If results of the two-sample test do not indicate a significant difference between the historical data and the newer data, then the background dataset is updated by merging the newer data with the historical data.

A finding of statistical significance means that there is evidence that the newer data is derived from a population different from that which the historical data were drawn in the background well and thus represent current groundwater conditions which are statistically different from those of the historical data. In this case, the newer data should not be added to the background historical dataset. This result should not necessarily be interpreted as a finding of a potential release by the landfill, as the background well location was selected in an upgradient location presumed to be unimpacted by the site. Rather, an investigation of this result should focus on conditions that may have resulted in a change in background groundwater conditions that requires updating background based on the newer data. Background may then be updated by truncating or removing the historical dataset and designating the new data as the current background dataset. The limited historical dataset is subject to enlargement (or not) by the updating process on the specified updating cycle established for this facility.



4.5 Detection Monitoring

In detection monitoring, the comparison of data from each compliance well to background well data is an interwell, two-sample procedure (Unified Guidance, Chapter 16). Comparisons are based on parametric or non-parametric methods, depending on the degree to which the data satisfy test assumptions.

4.5.1 Statistical Two-Sample Comparison by Upper Prediction Limit

Prediction intervals and their limits are statistical methods for comparing differences between background and compliance measurements (Unified Guidance, Chapters 6, 18). A prediction limit is a statistically based value above which one or more future sample values are unlikely to occur based on the population from which the historical samples were drawn. The threshold of a prediction limit is termed the upper prediction limit (UPL). Prediction limits are calculated depending on specifications and requirements of the test (e.g., number of samples, distribution [parametric or non-parametric], and outliers).

Guidance for the use and calculation of prediction limits is provided in the Unified Guidance (Chapter 18). A prediction limit is calculated from background data, and a one-sided UPL is used in detection monitoring (Unified Guidance, Section 18.1).

In this Groundwater Sampling and Analysis Plan, a prediction limit is used to compare downgradient well data to background data. A UPL is calculated for a constituent in the background well under a 1-of-2 resample design, based on required assumptions (e.g., normal or not normal). The same constituent in each downgradient well sample is compared to the background UPL.

4.5.2 Statistical Comparison of Compliance to Background

If the constituent in the downgradient well significantly exceeds the background UPL threshold and no additional sample “verification resampling” is collected to confirm this result, an SSI declaration for that constituent is confirmed at the downgradient well. If the constituent in the downgradient well does not exceed the UPL, no SSI is declared.



In the event an additional independent sample is collected, the first exceedance is classified as an “initial exceedance.” If the initial exceedance is confirmed by the additional sample, the initial exceedance then becomes a confirmed SSI. If the result of the additional test does not result in an exceedance, then the original exceedance is then re-classified as a non-exceedance (no SSI).

4.6 Assessment (Compliance) Monitoring

4.6.1 Condition of Assessment Monitoring

“Assessment monitoring is required whenever an SSI over background has been detected for one or more constituents...” (ADEM Code, 335-13-4.27(4)(a)). An SSI during detection monitoring invokes additional sampling requirements (numbers of samples and frequency of sample collection) as specified by the Department as part of an assessment monitoring program.

4.6.2 Statistical Comparison of Compliance to GWPS

A confidence interval and its lower limit (LCL) is used in assessment monitoring to evaluate whether the concentration of a constituent in the downgradient well significantly exceeds a fixed limit or its GWPS. Groundwater protection standards are published in the EPA National Primary Drinking Water Standards ^{14, 15} (EPA, 2022), Regional Screening Levels, and in the absence of a promulgated Maximum Contaminant Level (MCL), from EPA advisory documents. Table 1 (**Appendix G**) lists the GWPS standards that will be utilized at the Open Wilcox County East Landfill.

Guidance for the construction and use of the confidence interval method in assessment monitoring is given in the Unified Guidance (Chapters 7, 21). The Unified Guidance (Chapter 21) recommends parametric or non-parametric methods based on results of data screening and the testing of assumptions (e.g., normality).

During assessment monitoring, the LCL for the concentration of each constituent in each compliance well is compared to the GWPS of that constituent. Only when the constituent LCL exceeds the constituent GWPS (i.e., when the entire confidence interval lies above the GWPS) is an SSI declared for that constituent.



4.6.3 Statistical Comparison of Compliance to Background

Comparisons of compliance well datasets to background well datasets are used by the Department to evaluate the monitoring program appropriate for the facility given the current state of groundwater quality. The same prediction limit method discussed in **Section 4.5 Detection Monitoring** is used to compare compliance datasets to background datasets. The following summarize possible determinations of the Department.

If the concentrations of all Appendix II constituents (or an approved alternative list) detected are shown to be at or below background values for two consecutive sampling events, the facility may return to detection monitoring.

If the result of a compliance-to-background comparison is statistically significant, the concentration of the constituent at the compliance well has been shown to exceed the concentration at the background well. If the concentrations of all Appendix II constituents (or an approved alternative list) detected are shown to be above background values, but all concentrations are below the GWPS, the facility must continue in assessment monitoring.

If one or more Appendix II constituents (or an approved alternative list) are detected at statistically significant levels above the relevant GWPS, then additional requirements are needed by the Department.

4.7 Corrective Action

In the event a corrective action determination is made by the Department, a corrective monitoring program with a separate statistical analysis plan will be prepared for review and approval by the Department.

In general, components of statistical analyses in a monitoring program during corrective action include methods of confidence interval construction and its use in comparison to GWPS. A threshold is assigned the value of the upper confidence limit (UCL). The facility remains in



corrective action monitoring if the UCL of any constituent continues to remain above the relevant GWPS (UCL > GWPS).

5.0 Monitoring Frequency

5.1 Background Monitoring

As discussed previously, the upgradient monitoring well for the Open Wilcox County Landfill is identified as MW-1N. Water samples from background monitoring wells represent water quality that are not site-related or impacted by facility activities and are used to establish levels of constituents against which downgradient well samples are compared. Appendix I constituents will be analyzed in the background well and other compliance wells unless SSIs are detected, or it is required by the Department.

A minimum of four independent samples constitutes the minimum number of new samples used in updating the background well, although larger samples are recommended. The Unified Guidance recommends updating background every two to three years. Four years of annual sampling produce the minimum number of four new samples required for updating background. Background evaluation reports and updates will be submitted with the Groundwater Monitoring Report.

5.2 Detection Monitoring

The goal of detection monitoring is to identify changes in groundwater chemistry that may indicate a release of constituents from the landfill. Detection monitoring is required at a minimum for MSW landfills and includes monitoring for constituents listed in Appendix I. Once background monitoring has been completed, the downgradient wells will be sampled on an annual basis unless another sampling schedule is required by ADEM. Monitoring will continue throughout the active life of the landfill post-closure care period.

Changes to the groundwater chemistry will be identified by statistically comparing the results for each constituent in each well to the established background statistical limit for that



constituent. A report of the results of the annual sampling event will be submitted to the Department within 90 days of the date of sampling as required by ADEM.

If an SSI over background for one or more constituents listed in Appendix I is detected at any of the downgradient wells, the Department must be notified within 14 days. An assessment monitoring program will then be established within 90 days if a source other than the landfill is not identified as causing the contamination or the SSI resulted in an error in sampling, analyses, statistical evaluation, or natural variation in groundwater quality.

5.3 Assessment (Compliance) Monitoring

Assessment monitoring is required whenever an SSI over background has been detected for one or more constituents listed in Appendix I.¹ Assessment monitoring will commence within 90 days and annually thereafter if the SSI is shown not to be caused by a source other than the landfill or result of errors. Assessment monitoring will require Appendix II constituents to be sampled. One sample from each downgradient well will be collected and analyzed for each annual sampling event as required by the Department. GWPS will be established for each Appendix II constituent. If the concentration of any Appendix II constituents is above its respective background limit and below the GWPS, the facility will continue assessment monitoring. If the concentrations of the Appendix II constituents are shown to be at or below background values for two consecutive sampling events, the facility may return to detection monitoring. If Appendix II constituents are detected at statistically significant levels above the GWPS, the facility must notify the Department, characterize the nature and extent of the release by installing additional monitoring wells at the facility boundary, notify adjacent landowners in writing if contaminants have migrated off the site or if they occupy land that directly overlies any part of the plume, and initiate an assessment of corrective measures within 90 days.

5.4 Assessment of Corrective Measures

An assessment of corrective measures (ACM) will be initiated within 90 days if any of the Appendix II constituents have been detected at statistically significant levels above GWPS. The landfill will continue with assessment monitoring during the development of the ACM.



The ACM will analyze the effectiveness of potential corrective measures both short and long-term. The ACM will also include the performance, reliability, ease of implementation, and potential impacts of the corrective measure. The assessment of corrective measures will also discuss the control of exposure to residual contamination, time required to start and complete the remedy, cost to implement the remedy, and other institutional requirements of state and local agencies.

A public meeting with interested and affected parties will be held prior to selecting a remedy. The development and implementation of the assessment of corrective measure will follow the general requirements of the ADEM Admin. Code r. 335-13-4-.27(5), the Alabama Risk-Based Corrective Action Guidance (ARBCA) Manual, and the Alabama Environmental Investigation and Remediation Guidance (AEIRG). Corrective action is considered complete when the concentration of all constituents is at or below the GWPS for a period of three consecutive years.

6.0 Reporting Requirements

6.1 Detection Monitoring Report

The results of detection monitoring will be submitted to the Department within 90 days of performing groundwater sampling. Currently, the Open Wilcox County East Landfill will submit Groundwater Monitoring Reports annually. At a minimum Groundwater Monitoring Reports will include the following information:

- Site-specific information including location, current site conditions, etc.
- Status of on-site conditions
- A discussion of regulatory correspondences within the last calendar year including previous sampling events
- Summary of groundwater monitoring events with the monitoring status for each well during field sampling
- Summary of groundwater elevation and flow interpretations
- Results of the groundwater monitoring, sampling and resampling, COC, and analytical laboratory results produced during the sampling event (Field Services Report)



#66-03 Open Wilcox County East Landfill

- Summary of statistical data and calculations for the sampling event
- Recommendations
- Conclusions
- 7.5-minute quadrangles map
- Topographic and boundary survey
- Potentiometric map
- Any other information required by the Department

6.2 Annual Report

Currently, the Open Wilcox County East Landfill is required to perform groundwater detection monitoring annually unless another sampling schedule is required by the Department. When reporting is required, Groundwater Monitoring Reports will include the information previously discussed in **Section 6.1 Detection Monitoring**.

6.3 Assessment Monitoring Report

The results of assessment monitoring will be submitted to the Department within 90 days of performing groundwater sampling. As stated previously, Groundwater Monitoring Reports can be submitted annually as required by ADEM. Groundwater Monitoring Reports will include the information previously discussed in **Section 6.1 Detection Monitoring** of the required Appendix II constituents. The report will also discuss whether any constituents were present at an SSI above the GWPS for that sampling event.

6.4 Corrective Action Report

If the Open Wilcox County Landfill is required to perform corrective action, the facility will prepare an Assessment of Corrective Measures according to the procedures outlined in ADEM Admin. Code r. 335-13-4-.27(5).



7.0 Quality Assurance and Quality Control

Specific requirements of quality assurance/quality control (QA/QC) are outlined in this section of the SAP as required by ADEM. The purpose of QA/QC procedures is to provide assurance that field and analytical procedures produce an acceptable quality of data that supports site-specific decisions and represents actual site conditions.

7.1 Quality Objectives

Data quality objectives (DQOs) are both qualitative and quantitative and include statements that specify the required quality of data that will be used to help support project decisions. *Standard Operating Procedures I (Appendix E)* are established in this SAP for the Open Wilcox County East Landfill and will be used to achieve DQOs.

Quality Assurance Objectives (QAOs) are specified in terms of accuracy, precision, completeness, representativeness, and comparability. Appropriate QC procedures are used to known acceptable levels of accuracy and precision. These procedures will be maintained for each dataset and compared with historic data for the Open Wilcox County East Landfill.

7.2 Laboratory Quality Control

The contracted laboratory is responsible for conducting laboratory QC procedures and reporting results in accordance with its SOPs. At a minimum, the laboratory facility is expected to perform and report laboratory QC according to standard EPA Contract Laboratory Program analytes.

7.3 QA/QC Review and Verification

The overall quality of data will be reviewed and verified independently to determine the appropriateness of project-related data. Project data including QA/QC data (field QC results, laboratory QC results, PQLs, etc.) will be evaluated in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity. The results of this evaluation will be summarized in the Groundwater Monitoring Report as necessary. Corrective action for field or laboratory procedures will be taken as needed.



8.0 Facility Maintenance

Wilcox County is responsible for maintaining the premises and adhering to post-closure requirements as specified in ADEM Admin. Code r. 335-13-4.20(3). The Department is responsible for conducting site visits and notifying the facility owner of any deficiencies.

Facility maintenance is inherent to post-closure requirements and consists of but is not limited to the following:

- Ensuring that eroded areas are filled with suitable soil cover, compacted, and graded to minimize erosion and ponding
- Ensuring that areas of ponding have been properly filled, graded, and covered appropriately
- Controlling access to the site by erecting signs and/or barricading (includes fencing), and locking the entrance
- Removing any waste dumped at the landfill site
- Removing large trees with deep root systems

As previously mentioned, this landfill is open and operates as a C/D landfill. The facility owner must adhere to the latest permit requirements which include ensuring that quarterly volume reports are submitted to the Department; making sure that the site is secured by natural or artificial barriers and preventing any unauthorized vehicles into the facility; ensuring that the proper waste streams are accepted; ensuring that the site maintains a certified operator; that “active” areas are properly graded and covered as necessary; ensuring that “inactive” areas have final and vegetative cover; ensuring that the facility has the proper signage; and ensuring that the all-weather access road is wide enough and properly maintained. The Department conducts frequent visits to the landfill and notifies Wilcox County of any deficiencies at the site.



9.0 References

1. Alabama Department of Environmental Management. [2022](https://adem.alabama.gov/alEnviroRegLaws/files/Division13.pdf). Division 13 – Land Division – Solid Waste Program. Retrieved from <https://adem.alabama.gov/alEnviroRegLaws/files/Division13.pdf>
2. Furman Jr., Herbert J. 1989, revised 1990. Engineer's Report Wilcox County, Alabama Sanitary Landfill. Alabama Department of Environmental Management Document Number: 13507 66-03 131 05-30-1990 SC PJJL 66-03SC19900530. Retrieved from www.adem.alabama.gov.
3. Goodwyn, Mills, and Cawood Environmental Consultants Inc. 1994. Wilcox County, Alabama Municipal Solid Waste Landfill Closure/Post Closure Plan in accordance with ADEM Administrative Code Division 13, Section 335-13-4-.20. Alabama Department of Environmental Management Document Number: 13507 66-03 131 10-03-1994 SC PJJL 66-03SC19941003. Retrieved from www.adem.alabama.gov.
4. Alabama Department of Environmental Management. Wilcox County Highway 41 Sanitary Landfill Vertical Expansion Memorandum ("Hydrogeologic Site Evaluation"). 1994. Alabama Department of Environmental Management Document Number: 13507 66-03 131 01-20-1994 SC PJJL 66-03SC19940120. Retrieved from www.adem.alabama.gov.
5. Alabama Department of Environmental Management. ADEM Solid Waste Disposal Facility Permit. 2014. Alabama Department of Environmental Management Document Number: 13507 66-03 131 04-14-2014 PERM PJJL Renewal Permit. Retrieved from www.adem.alabama.gov.
6. U.S. Environmental Protection Agency (Robert W. Puls/Michael J. Barcelona). 1996. Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures. U.S. Environmental Protection Agency. Retrieved from www.epa.gov/sites/default/files/2015-06/documents/lwflw2a.pdf
7. U.S. Environmental Protection Agency. 2014. Test Methods for Evaluating Solid Waste: Physical/Chemical Method Compendium (SW-846). U.S. Environmental Protection Agency. Retrieved from www.epa.gov/hw-sw846/sw-846-compendium.
8. Baird, R.B., Eaton, R.D., et. al. 2017. Standard Methods for Examination of Water and Wastewater 23rd Edition. American Public Health Association, the American Water Works Association, and the Water Environment Federation.



9. U.S. Environmental Protection Agency. 1983. Methods for Chemical Analysis of Water and Waste. U.S. Environmental Protection Agency. Cincinnati, OH. Retrieved from www.wbdg.org/FFC/EPA/EPACRIT/epa600_4_79_020.pdf.
10. U.S. Environmental Protection Agency. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance. Report Number: EPA 530-R-09-007. Retrieved from <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockkey=P10055GQ.TXT>
11. Sanitas Technologies. 2022. <https://www.sanitastech.com/> Retrieved 22 May 2022.
12. U.S. Environmental Protection Agency. 2016. Statistical Software ProUCL 5.1.00 for Environmental Applications for Data Sets with and without Nondetect Observations. Retrieved from <https://www.epa.gov/land-research/proucl-software>
13. ProUCL (version 5.1) Technical Guide. EPA/600/R-07/041, October 2015. Retrieved from https://www.epa.gov/sites/default/files/2016-05/documents/proucl_5.1_tech-guide.pdf
14. U.S. Environmental Protection Agency. National Primary Drinking Water Regulations Retrieved May 22, 2022 from <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>
15. U.S. Environmental Protection Agency. National Primary Drinking Water Regulation Table. Report Number: EPA 816-F-09-004. Retrieved from https://www.epa.gov/sites/production/files/2016-06/documents/npwdr_complete_table.pdf
16. Texas Commission on Environmental Quality (TCEQ). 2018. Guidelines for Preparing a Groundwater Sampling and Analysis Plan. TCEQ Regulatory Guidance Waste Permits Division RG-074.
17. R.E. McGough, Inc. 2016. Spring 2016 Groundwater Monitoring Report Wilcox County East Landfill #66-03. Alabama Department of Environmental Management. Retrieved from www.adem.alabama.gov.



APPENDICES

Appendix A: Facility Maps

Figure A-1: Site Location Map

Figure A-2: Aerial Map and Location of Wells

Figure A-3: Boundary and Topographic Map

Figure A-4: Geologic Map

Figure A-5: USDA Soil Map

Figure A-6: FEMA FIRMette Flood Map of Landfill Site

Figure A-7: Alabama Seismic Events Map (Wilcox County)

Figure A-8: Potentiometric Surface Map – Spring 2023

United States Department of the Interior Fish and Wildlife Services Letter

Appendix B: Photos of Monitoring Wells*

Appendix C: Monitoring Well Installation Data

Appendix D: Groundwater Sampling Forms

D-1: Sample Bottle Request Form (sample)

D-2: Chain-of-Custodies Form (sample)

D-3: Groundwater Sampling Log (sample)

Appendix E: Standard Operating Procedures

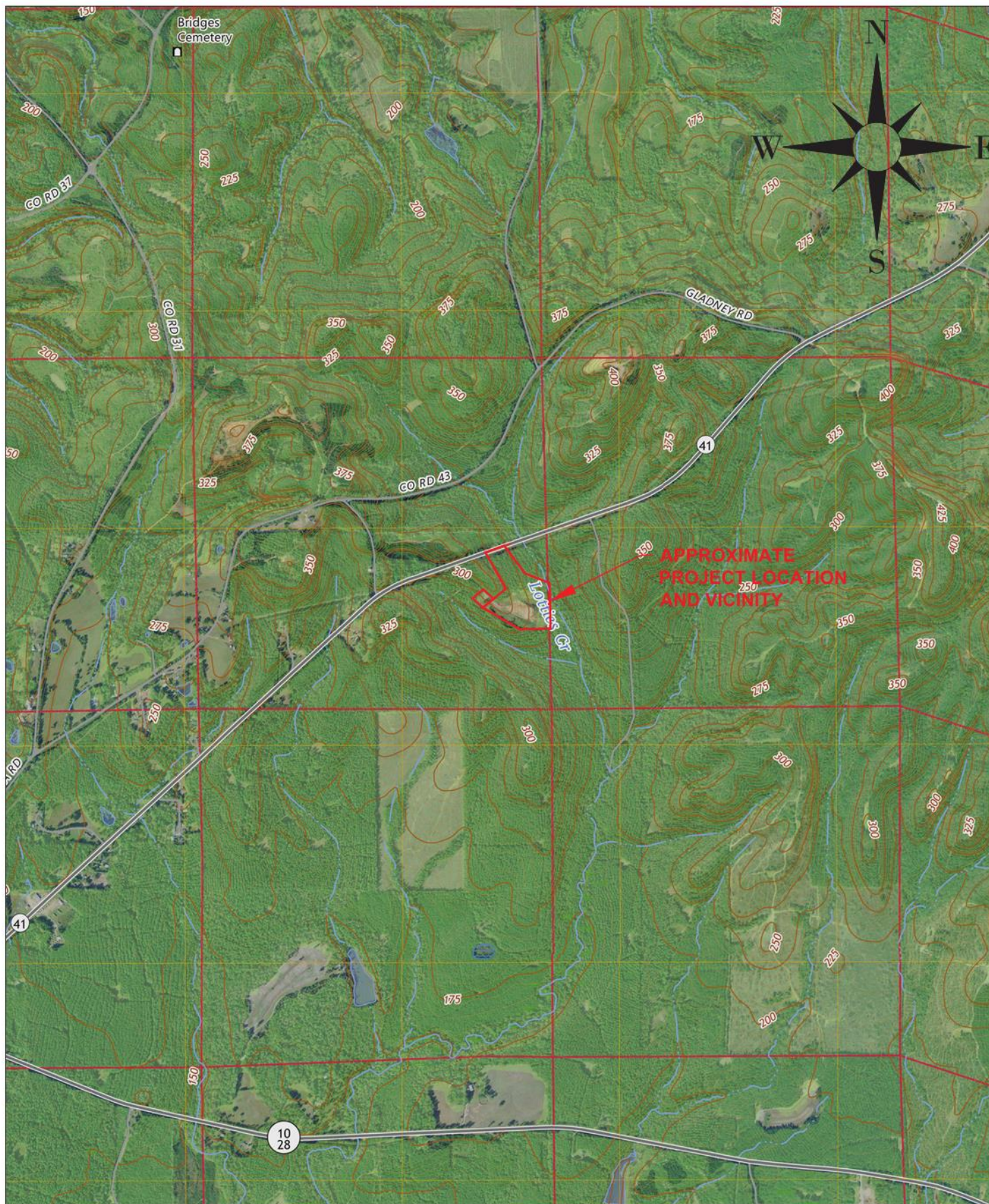
Appendix F: Lab Certification and Accreditation

Appendix G: Compliance Standards

* Note: These photos were taken during site visits on 7/6/2021 and 2/25/23 and should be updated if there are any material changes to the site.

APPENDIX A

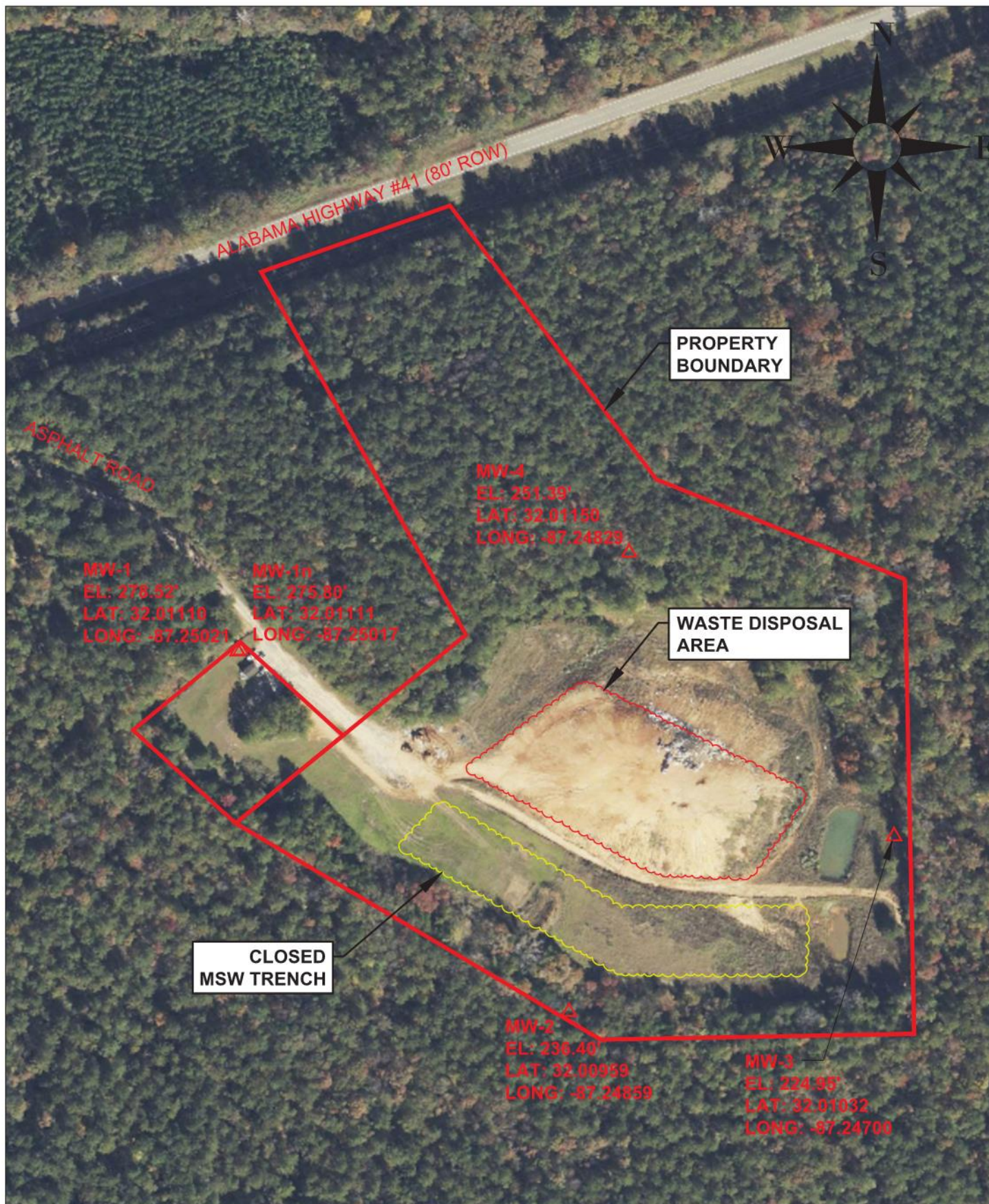
(Facility Maps)



#66-03 WILCOX COUNTY EAST LANDFILL
CAMDEN, AL

SITE LOCATION MAP

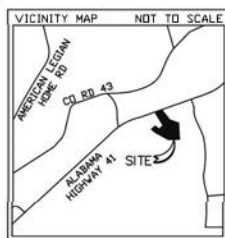
DRAWN TLE	SCALE 1"=2000'
CHECKED SM	DATE 06/28/2022
SHEET A-1	
PROJ# WILCOXE	



#66-03 WILCOX COUNTY EAST LANDFILL
CAMDEN, AL

AERIAL MAP AND LOCATION OF WELLS

DRAWN TLE	SCALE 1"=200'
CHECKED SM	DATE 06/28/2022
SHEET A-2	
PROJ# WILCOXE	



PK	NORTHING	EASTING	SATITUDE	LONGITUDE
PK-1	731552.352	2045917.398	32 00°39.8082"	-87 15°00.8398"
PK-1B	731572.358	2045936.989	32 00°40.0007"	-87 15°00.6317"
PK-2	731011.816	2046230.312	32 00°34.4492"	-87 14°54.9972"
PK-3	731339.934	2046899.317	32 00°37.6894"	-87 14°49.4362"
PK-4	731707.706	2046521.737	32 00°41.3317"	-87 14°53.8166"

BEING THE NE CORNER
OF SECTION 15, T-12-N, R-8-E,
WILCOX COUNTY, ALABAMA
POINT OF COMMENCEMENT

LEGEND

- △ COLLECTED DATA
- FIELD MEASUREMENT
- MONITORING WELL
- PROPERTY BOUNDARY
- OVERHEAD UTILITIES
- RIGHT OF WAY LINE
- INDEX CONTAIN LINES
- INDEX CONTAIN LINES



GRAPHIC SCALE 1"=300'

0 150 300 600

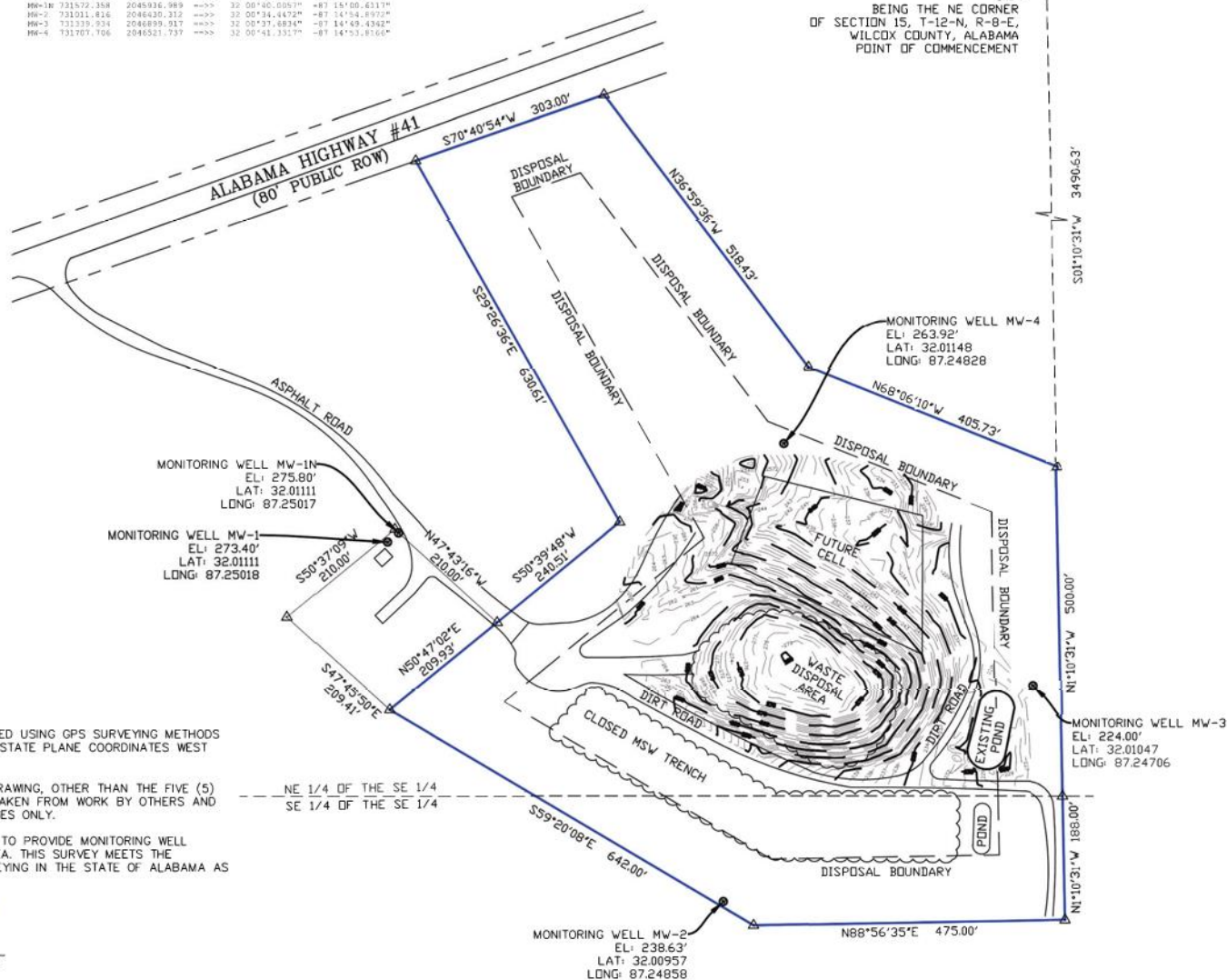
SURVEY INFORMATION:

MONITORING WELL LOCATIONS OBTAINED USING GPS SURVEYING METHODS TIED TO CORs, BASED ON ALABAMA STATE PLANE COORDINATES WEST ZONE.

ALL INFORMATION SHOWN ON THIS DRAWING, OTHER THAN THE FIVE (5) MONITORING WELL LOCATIONS, WAS TAKEN FROM WORK BY OTHERS AND IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

THE PURPOSE OF THIS SURVEY WAS TO PROVIDE MONITORING WELL LOCATIONS WITHIN THE LANDFILL AREA. THIS SURVEY MEETS THE STANDARDS OF PRACTICE FOR SURVEYING IN THE STATE OF ALABAMA AS A SPECIAL PURPOSE SURVEY.

[Signature]
KEITH MAXWELL, PE, PLS 17262



LOCATION OF MONITORING WELLS AND PARTIAL
PRELIMINARY BOUNDARY SURVEY

1612 ALABAMA HIGHWAY 41,
CAMDEN, AL 36726

WILCOX COUNTY, STATE OF ALABAMA

Surveying & Engineering

USA

AL State License:
Professional Surveying, L.C.
Professional Engineering, L.C.
AL 1984-CA-387-LS
AL 1984-CA-387-E

ALABAMA | GEORGIA | MINNESOTA | MAINE | TENNESSEE | TEXAS
ALANDSurvey.com | USALandSurveyor.com
Phone (800) 788-8040

ALABAMA
PROFESSIONAL
ENGINEER
LICENSE NO.
17262
LAND SURVEYING
KEITH MAXWELL

Drawn by: GSY Scale: 1"=300'

Project: 2023-142 EAST LANDFILL

File Name: 2023-142.dwg

Date: REV A10 4, 2023
JULY 18, 2023

Sheet: 1 of 1

#66-03 WILCOX COUNTY EAST LANDFILL
CAMDEN, AL

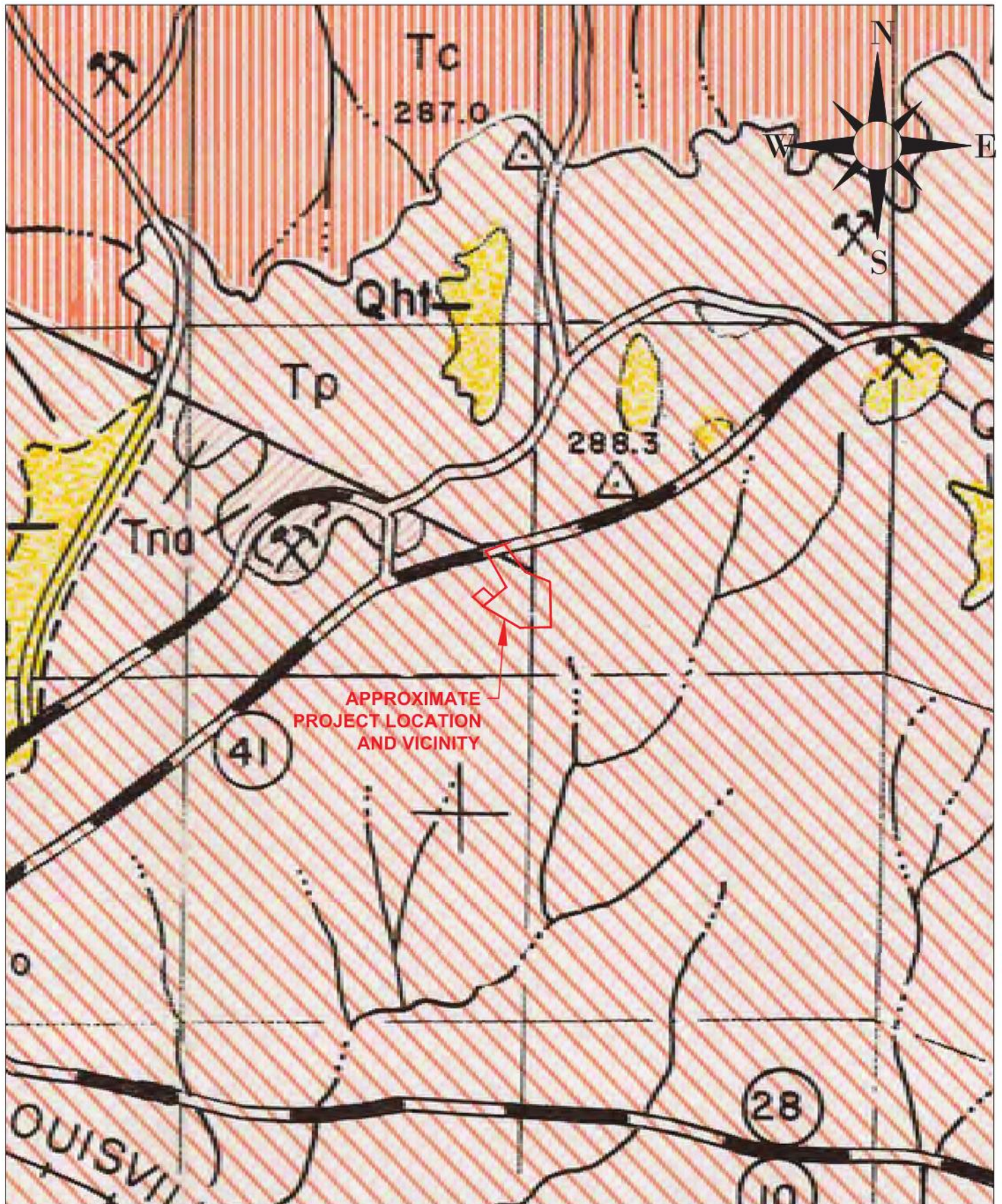
BOUNDARY AND TOPOGRAPHIC MAP

SCALE: NTS, DISPLAY ONLY

CHECKED: DATE: 08/08/23

SHEET: A-3

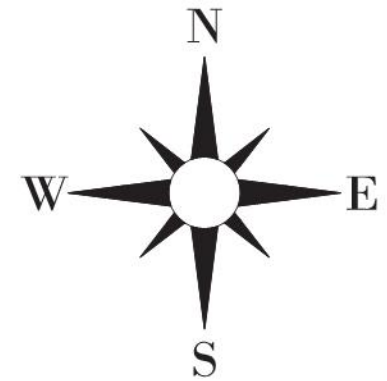
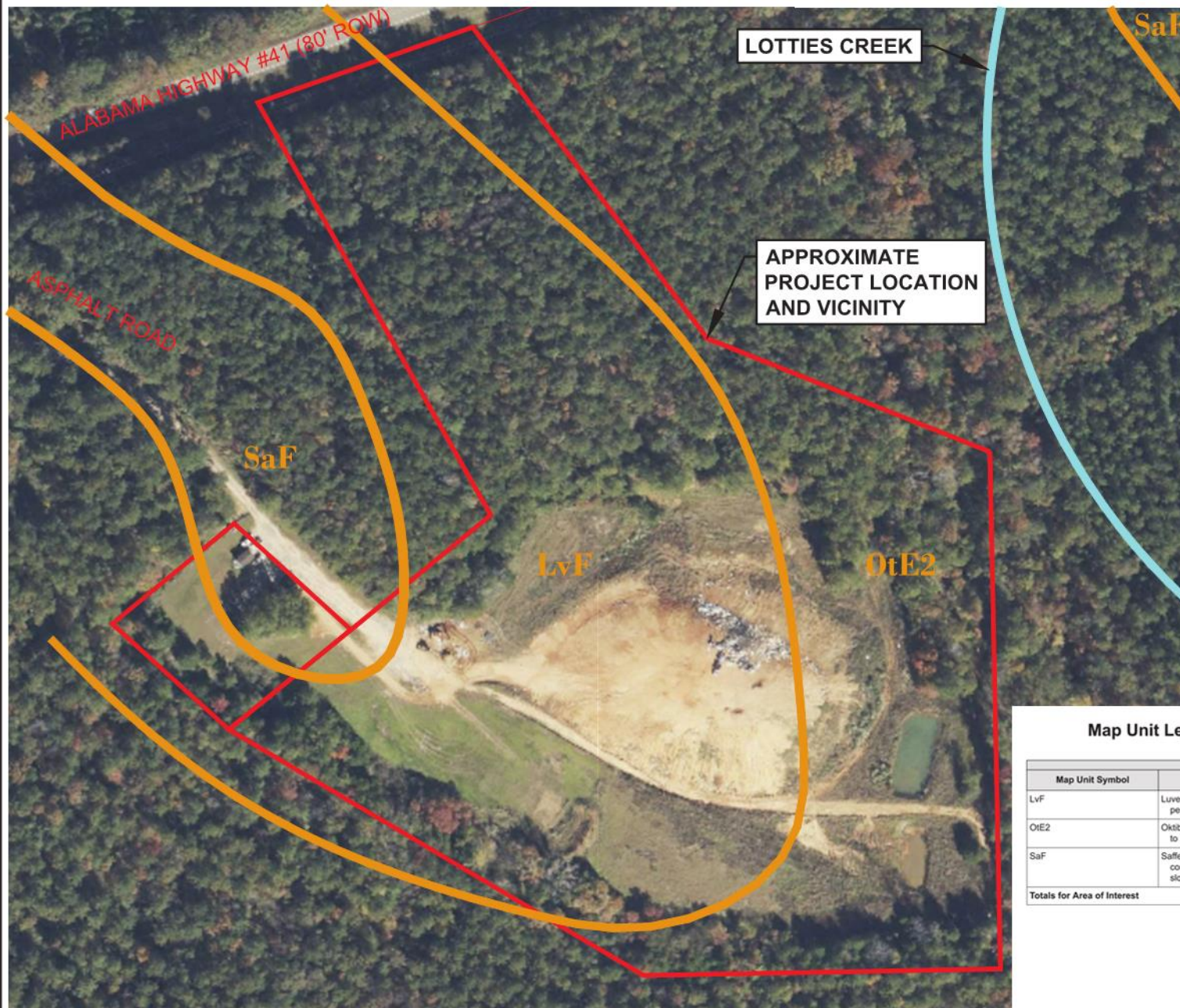
PROJ. W. CO. 08



#66-03 WILCOX COUNTY EAST LANDFILL
TOWNSHIP 12, RANGE 8, SECTION 15
CAMDEN, AL

GEOLOGIC MAP

DRAWN TLE	SCALE 1"=2000'
CHECKED SM	DATE 06/28/2022
SHEET A-4	
PROJ# WILCOXE	



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
LvF	Luverne sandy loam, 15 to 35 percent slopes	17.1	40.5%
OtE2	Oktibbeha-Brantley complex, 5 to 25 percent slopes, eroded	21.6	51.3%
SaF	Saffell-Smithdale-Luverne complex, 8 to 35 percent slopes	3.4	8.1%
Totals for Area of Interest		42.1	100.0%



#66-03 WILCOX COUNTY EAST LANDFILL
CAMDEN, AL

USDA SOIL MAP

DRAWN
TLE

SCALE
1"=200'

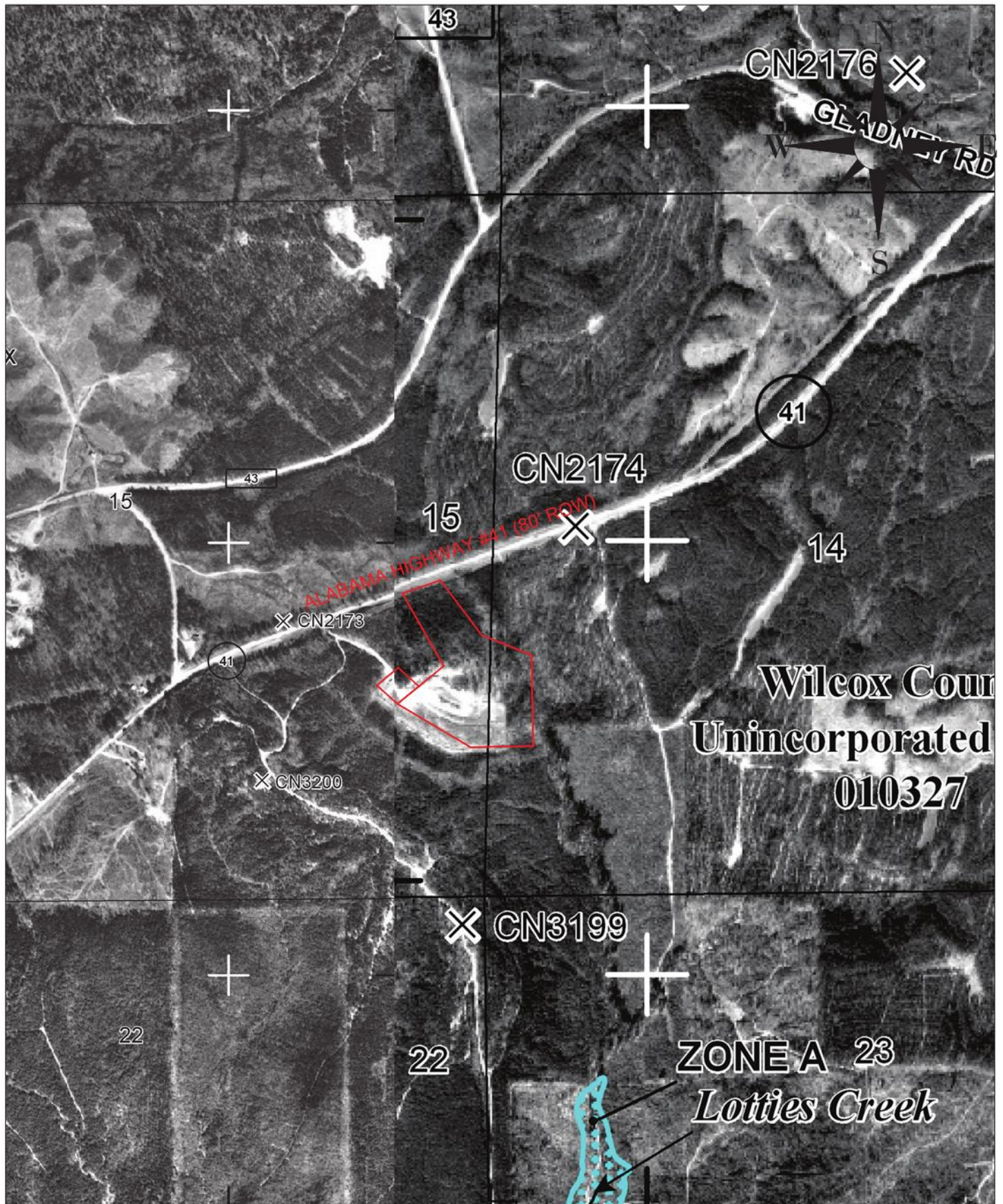
CHECKED
SM

DATE
06/28/2022

SHEET

A-5

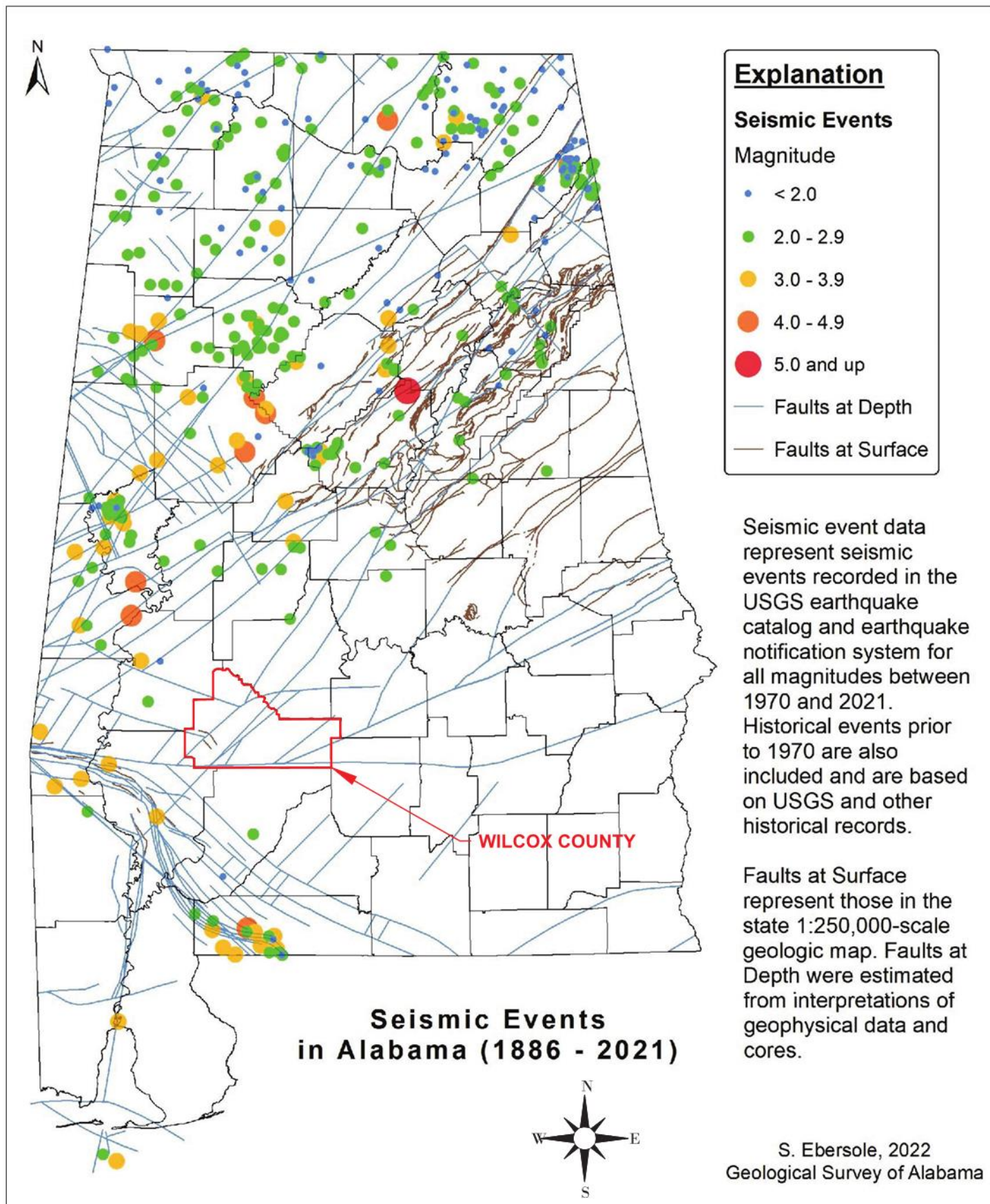
PROJ# WILCOXE



#66-03 WILCOX COUNTY EAST LANDFILL
CAMDEN, AL

FEMA FIRMette FLOOD MAP OF LANDFILL SITE

DRAWN TLE	SCALE 1"=200'
CHECKED SM	DATE 06/28/2022
SHEET A-6	
PROJ# WILCOXE	



S. Ebersole, 2022
Geological Survey of Alabama



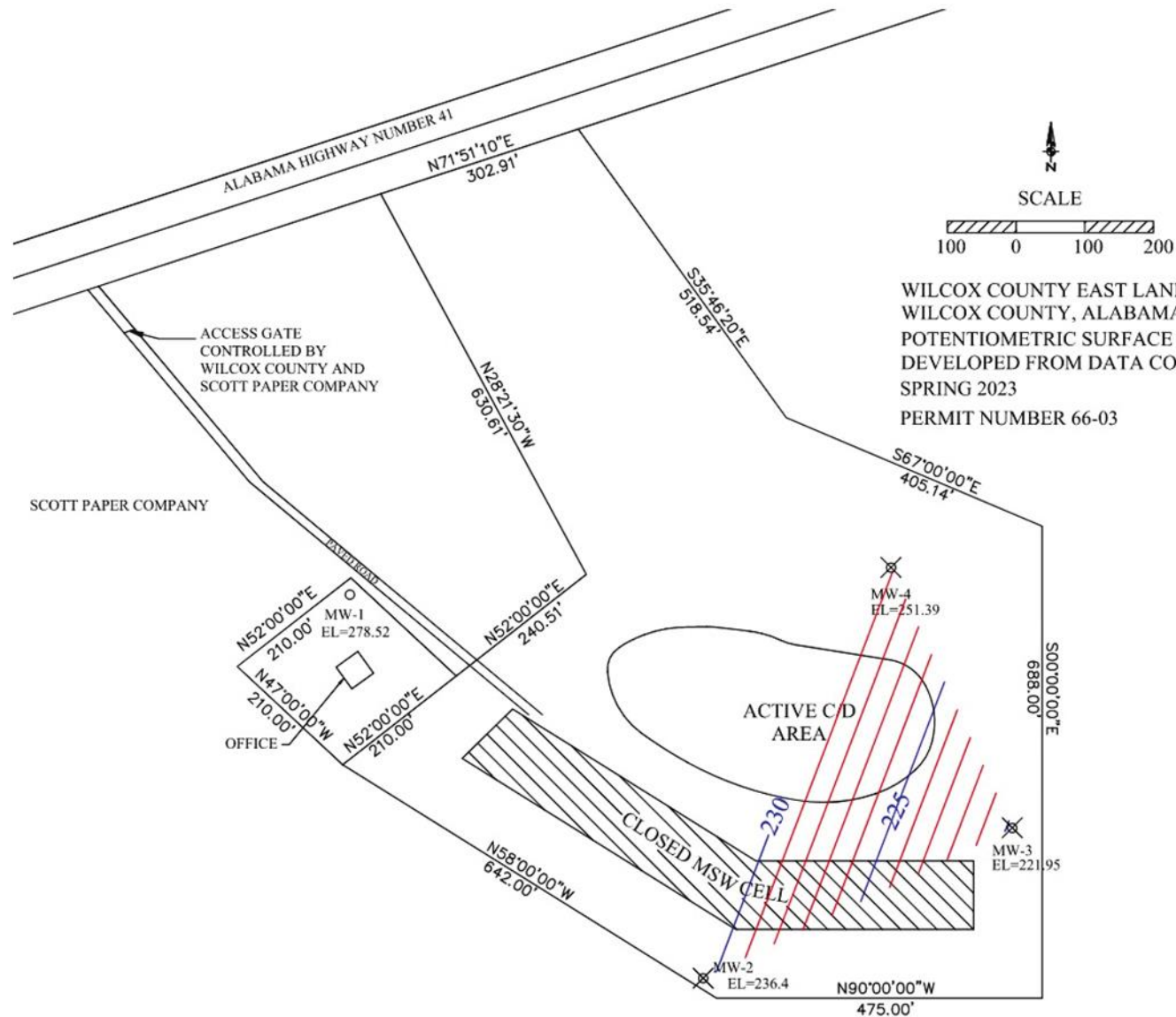
#66-01 WILCOX COUNTY WEST LANDFILL
CAMDEN, AL

ALABAMA SEISMIC EVENTS MAP

DRAWN TLE	SCALE N.T.S.
CHECKED SM	DATE 06/28/2022

SHEET
A-7

PROJ# WILCOXW



SCALE



WILCOX COUNTY EAST LANDFILL
WILCOX COUNTY, ALABAMA
POTENTIOMETRIC SURFACE MAP
DEVELOPED FROM DATA COLLECTED
SPRING 2023
PERMIT NUMBER 66-03



#66-03 WILCOX COUNTY EAST LANDFILL
CAMDEN, AL

POTENTIOMETRIC SURFACE MAP - SPRING 2023

DRAWN
RM SCALE
AS SHOWN

CHECKED
SM DATE
05/15/23

SHEET

A-8

PROJ# WILCOXE



United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

JUL 13 2022

IN REPLY REFER TO:
2022-0056780

Ms. Sidney H. May, P.E.
Sidney H. May, P.E., LLC.
420 20th Street North, Suite 2200
Birmingham, Alabama 35203

Dear Ms. May:

Thank you for your letter dated June 14, 2022, requesting a threatened and endangered species list which may exist at the Open Wilcox County East Landfill located in Camden, Wilcox County, Alabama. We are providing the following information in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 Cr.S.C. 1531 et seq.).

Federally Listed or Candidate Species

The following species may occur within or near your project area:

- Gopher tortoise (*Gopherus polyphemus*) – Candidate

The gopher tortoise is a burrowing species that prefers habitats with deep, well drained, sandy soil in open forests or savannas. Gopher tortoise burrows may occur in close proximity of roads and with the road right-of-ways. This proposed project falls within the non-listed eastern range of the gopher tortoise, which is a candidate species found in Wilcox County. The tortoise is also a protected non-game species in the State of Alabama. If active burrows are identified at the site, we recommend you notify the appropriate state personnel as to your findings. Although candidate species are not afforded protection under the Endangered Species Act, the tortoise is still a species of concern for our office wherever it occurs in Alabama.

Surveys for the tortoise are not required from this office but should be conducted in the event the tortoise becomes federally protected before or during your project activities. If the tortoise is present at the site the following Best Management Practices (BMPs) may be incorporated in the plans for its protection:

- Erect a silt fence barrier between the tortoise burrows and the project activity. This also includes entrances and exits from the project site.
- Keep equipment at least 50 feet from burrow openings.
- The tortoise becomes inactive, generally November through February, when overnight temperatures remain below 50 degrees Fahrenheit for three consecutive days. Construction

completed during these months would avoid direct impacts to this species, provided that no burrows exist in the area of disturbance.

- Maintain low speeds while driving to and from the work site to avoid tortoises that may be present in the roadway.
- If vehicles or equipment will be parked overnight outside the excluded work zone, check for tortoises underneath prior to moving the vehicles.

Please note that the gopher tortoises' status is currently under range-wide review, and the species could be listed in the future. If the proposed work is not carried out in the next year, it would be prudent to contact this office to determine if any changes have occurred to the status of the species.

We've recently made some changes to our review process to streamline our consultations. In the future, we ask that you visit the US Fish and Wildlife Services' Information, Planning, and Conservation tool (IPaC) to generate a species list and project code. **Please forward your email to alabama@fws.gov and make sure to include your project information and project code, then we can proceed with our review.** This is the email address that will be receiving all project information moving forward.

If you have not used IPaC previously, you can begin by:

1. Visiting the website <https://ipac.ecosphere.fws.gov/>
2. Map your project area. This generates a non-official species list.
3. Define the project- You will be prompted to login to IPaC (if you do not have an account- create one). Once you have logged in, proceed to defining your project.
4. After you have defined your project (name and description), request an official species list (manila box to the right). **Requesting an official species list is only for consultants and agencies that intend on consulting with us for USFWS concurrence/review.** If you do not plan to consult with us, you may use the resource list generated in step 2 to view potential species in your project area.
5. Once you enter your information for an official species list, you can skip to step 4, "Download documentation" in the popup window.
6. Download the official species list and submit the **project code** to us, found at the top of the letter.

*A step-by-step YouTube video for requesting an official species list and generating a project code can be found at https://www.youtube.com/watch?v=ylgS_UeNws4

Additional functionality is being developed within IPaC to further streamline our environmental review process. Please continue to explore all the options that will be available for our office on the IPaC website.

Under regulations that implement section 7 of the Endangered Species Act the accuracy of this species list should be verified after 90 days. We appreciate your concern for threatened and endangered species. If you have any questions or need additional information, please contact Ms. Erin Padgett at erin_padgett@fws.gov. Please refer to the reference number located at the top of this letter in future phone calls or written correspondence.

Sincerely,

A handwritten signature in blue ink, appearing to read "William J. Pearson".

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

APPENDIX B

(Photos of Monitoring Wells)

PHOTOS OF MONITORING WELLS



MW-1: Background Well



MW-1n: Background Well (installed February 2023)



PHOTOS OF MONITORING WELLS



MW-2: Downgradient Well



MW-3: Downgradient Well



PHOTOS OF MONITORING WELLS



MW-3: Downgradient Well (well protected with bollards and concrete collar – installed February 2023)



MW-4: Downgradient Well



APPENDIX C

(Monitoring Well Installation Data)

ELEV.
SEE SCHEDULE

WELL CAP

18" X 18"
X 4" CONCRETE SLAB

12" Ø CONCRETE
COLLAR

5'-0"

MONITOR WELL
TYPICAL DETAIL - N.S.

4" Ø PVC CASING

CLAY OR
BENTONITE
BACKFILL

LENGTH VARIES, SEE MONITOR WELL
SCHEDULE

4" Ø WELL SCREEN

10'-0"

ELEV.
SEE SCHEDULE

LOG OF BORING

CONTRACTED WITH: Sidney H. May, P.E., LLC

PROJECT NAME: Wilcox County East Landfill - Monitoring Well Replacement BORING NO.: MW-1

SHEET 1 OF 2

PROJECT LOCATION: Camden, Alabama

JOB NO.: 123120

DATE: 2/23/23

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE DATA				WELL CONSTRUCTION
			NUMBER	TYPE	BLOWS/6"	N-VALUE	
0		4" TOPSOIL					
5		Medium, red-brown, sandy CLAY	1	⊗	2-4-3	7	
10		...stiff, red-tan	2	⊗	3-3-6	9	
15		...soft-medium	3	⊗	1-3-4	7	
20		...little sand	4	⊗	1-2-3	5	
25		Highly decomposed SHALE, sampled as stiff, gray silt, trace sand	5	⊗	4-6-10	16	
30		...very stiff, no sand	6	⊗	4-6-12	18	
35		...stiff, moist	7	⊗	5-5-11	16	
40		...very stiff	8	⊗	4-6-12	18	
45		...same	9	⊗	6-7-13	20	
50		...same	10	⊗	7-11-13	24	
55		...same	11	⊗	6-8-11	19	
60		...same	12	⊗	6-8-15	23	
65		...stiff	13	⊗	5-5-9	14	

BHATE
QUALITY • SERVICE • EXCELLENCE

⊗ Split Spoon

GNE = Ground Water Not Encountered

▽ = Water Table Encountered

@ Time of Boring

▼ = Delayed Water Table Level

⊠ = Hole Cave In Depth

Bhate Geosciences Corporation

5217 5th Avenue South

Birmingham, Alabama 35212

Phone: 205-591-7062

Fax: 205-591-7184

← Cement-Bentonite Grout
← PVC Riser

LOG OF BORING

CONTRACTED WITH: Sidney H. May, P.E., LLC

PROJECT NAME: Wilcox County East Landfill - Monitoring Well Replacement BORING NO.: MW-1

SHEET 2 OF 2

PROJECT LOCATION: Camden, Alabama

JOB NO.: 123120

DATE: 2/23/23

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE DATA				WELL CONSTRUCTION
			NUMBER	TYPE	BLOWS/6"	N-VALUE	
70		Highly decomposed SHALE, sampled as very stiff, gray silt, trace sand	14	⊗	4-7-13	20	
75		...same	15	⊗	5-7-12	19	
80		...stiff, very moist	16	⊗	3-4-4	8	
85		...very stiff, moist	17	⊗	7-8-11	19	
90		...same	18	⊗	5-11-14	25	
95		...very moist	19	⊗	5-9-12	21	
100		...hard, moist	20	⊗	6-7-50/4	57/10	
105		...very stiff	21	⊗	6-8-14	22	
110		...same	22	⊗	6-9-14	23	
115		...same	23	⊗	6-9-14	23	
120		Boring terminated at 120 feet	24	⊗	50/5-x-x	R	 Bentonite Hole Plug Filter Sand 0.010 Well Screen
125		R = Practical Refusal					
130							
135							

Wilcox County East Landfill - Replacement Well

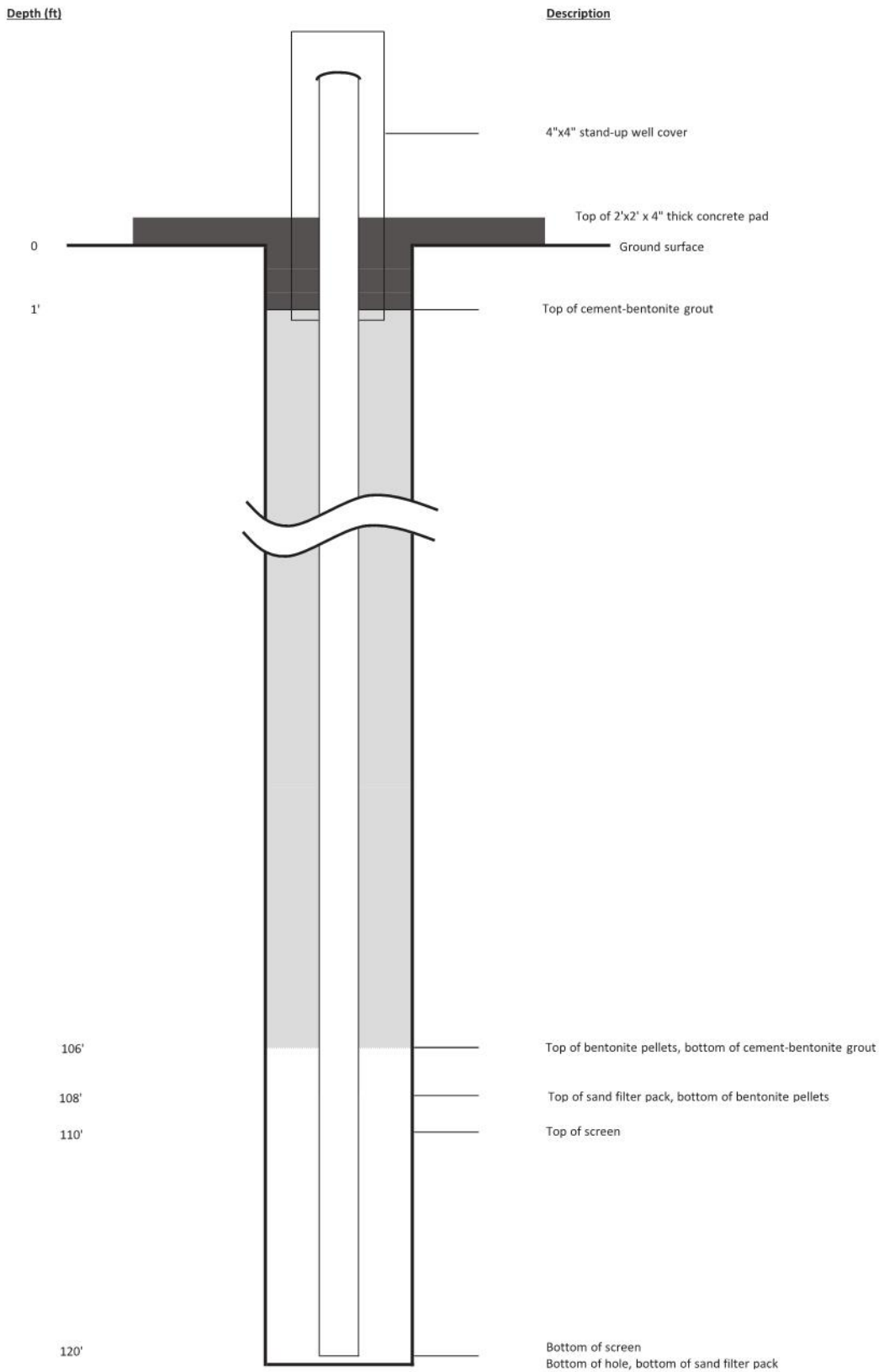


Figure 1: Well Construction Diagram - MW-1
(Not to Scale)

APPENDIX D

(Groundwater Sampling Forms)

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or
MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY:
Lab Sample # / Comments:

Company:		Billing Information:	
Address:			
Report To:		Email To:	
Copy To:		Site Collection Info/Address:	
Customer Project Name/Number:		State: County/City: Time Zone Collected: / [] PT [] MT [] CT [] ET	
Phone:	Site/Facility ID #:	Compliance Monitoring?	
Email:		[] Yes [] No	
Collected By (print):	Purchase Order #:	DW PWS ID #:	
	Quote #:	DW Location Code:	
Collected By (signature):	Turnaround Date Required:	Immediately Packed on Ice:	
		[] Yes [] No	
Sample Disposal:	Rush:	Field Filtered (if applicable):	
[] Dispose as appropriate [] Return	[] Same Day [] Next Day	[] Yes [] No	
[] Archive: _____	[] 2 Day [] 3 Day [] 4 Day [] 5 Day	Analysis: _____	
[] Hold: _____	(Expedite Charges Apply)		

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

[illegible]

Customer Remarks / Special Conditions / Possible Hazards:		Type of Ice Used: Wet Blue Dry None				SHORT HOLDS PRESENT (<72 hours): Y N N/A			
		Packing Material Used:				Lab Tracking #: 2450257			
		Radchem sample(s) screened (<500 cpm): Y N NA				Samples received via: FEDEX UPS Client Courier Pace Courier			
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY					
				Table #:					
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum:					
				Template:					
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Prelogin:					
				PM:					
				PB:					

Lab Sample Temperature Info: Temp Blank Received: Y N NA Therm ID#: _____ Cooler 1 Temp Upon Receipt: _____ oC Cooler 1 Therm Corr. Factor: _____ oC Cooler 1 Corrected Temp: _____ oC Comments:	
Trip Blank Received: Y N NA HC_ MeOH TSP Other	
Non Conformance(s): YES / NO	Page: _____ of: _____

DEP Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME:	SITE LOCATION:
WELL NO:	DATE:

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (feet - feet) X gallons/foot = gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = gallons + (gallons/foot X feet) + gallons = gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):		FINAL PUMP OR TUBING DEPTH IN WELL (feet):		PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):					
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μ mhos/cm or μ S/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016											
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)											

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:				SAMPLER(S) SIGNATURE(S):				SAMPLING INITIATED AT:		SAMPLING ENDED AT:	
PUMP OR TUBING DEPTH IN WELL (feet):				TUBING MATERIAL CODE:		FIELD-FILTERED: Y N Filtration Equipment Type:				FILTER SIZE: _____ μ m	
FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced)				DUPLICATE: Y N							
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)				INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH					SAMPLE PUMP FLOW RATE (mL per minute)
REMARKS:											
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)											
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)											

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

APPENDIX E

(Standard Operating Procedures)

STANDARD OPERATING PROCEDURES I

Low-Flow Groundwater Sampling

Required Equipment

1. Final drawings, as deemed necessary
2. Field logbook
3. Permanent black-ink pens and markers
4. Sample tags/labels and appropriate documentation
5. pH, conductivity, temperature meter, water level meter, turbidity meter, and dissolved oxygen meter
6. Flow-through box
7. Insulated cooler(s), chain-of-custody seals, Ziploc™ bags
8. Sample containers, coolers, blue ice or equivalent
9. Sample equipment: electric submersible pump; peristaltic pump; battery
10. Decontamination equipment (distilled water containers, etc.)
11. PPE (safety vest, hat, and shoes), eye protection, disposable gloves, appropriate field attire, and insect, tick, and snake repellent; etc.
12. Sample log forms (see **Appendix D**)
13. Miscellaneous equipment/items as necessary to complete the field work

Typical Procedures

Preparation

1. Record necessary data in field logbook.



STANDARD OPERATING PROCEDURES I

Low-Flow Groundwater Sampling

2. Prepare sampling equipment including calibration of field meters prior to use.
3. Move field equipment and supplies to sampling location.

Purging

1. Remove lock and well cap. Measure static water level. Measure the total depth of the well if unknown.
2.
 - a. Electric Submersible Pump: connect new tubing to the pump, remove the pump from the pump holder or case, and rinse the pump off with distilled water (decontaminate). Slowly lower pump/tubing into the well to the required depth.
 - b. Peristaltic Pump: slowly lower new tubing into well to the required depth.
3.
 - a. Electric Submersible Pump: connect the pump controller to the pump reel and to the battery and connect tubing to flow through cell containing multi-probe for field measurements.
 - b. Peristaltic Pump: place required tubing in the pump and connect the pump to the battery and connect tubing to flow through cell containing multi-probe for field measurements.
4. Turn on the pump(s) and adjust the flow rate that results in a minimal and stabilized well drawdown per low-flow/low-stress requirements.
5. As removed groundwater flows through cell, begin recording field parameters every three minutes. Field measurements include pH, temperature, specific conductance, dissolved oxygen, turbidity and ORP.
6. Continue well purging until stabilization criteria are met per low-flow/low-stress requirements.



STANDARD OPERATING PROCEDURES I

Low-Flow Groundwater Sampling

Sampling

1. After specified parameters have been stabilized, reduce the flow rate at the pump controller, as necessary. The flow rate for pumping should be the same or less than the purge rate in the well to minimize sample aeration.
2. Disconnect tubing from flow through cell and fill appropriate sample containers as required for required well analyses.
3. Ensure samples are properly labeled and recorded on the *Chain-of-Custody* form.
4. Place samples in cooler on ice.
5. Record necessary data in field logbook.

Decontamination

1. New sample tubing is utilized for each well. After use, the tubing is collected in bags for disposal.
2. Clean and decontaminate other sample equipment using distilled water and other appropriate procedures prior to sampling other wells. Sample bottles, tubing, and disposable gloves shall not be reused.
3. The Wilcox County East Landfill is heavily wooded in some parts. Unsampled water, purged water, and decontamination water is not stored and is disposed of on-site after sampling in a manner that limits adverse effects to the environment.



APPENDIX F

(Lab Certification and Accreditation)

The Alabama Department of Environmental Management

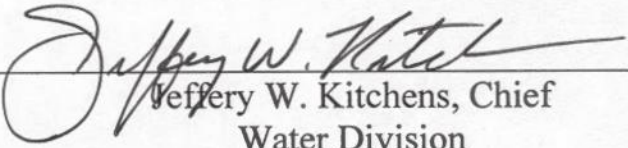
certifies that

Pace Analytical Services, LLC - Tuscaloosa

Having met Department laboratory certification criteria, is **Certified** to conduct
Drinking Water analyses for the following:

Microbiological

Effective July 1, 2023 through June 30, 2024


Jeffery W. Kitchens, Chief
Water Division
Alabama Department of Environmental Management

Laboratory Number **40170**

Pace Analytical Services, LLC - Tuscaloosa
Expires June 30, 2024

Analyte	Method	Analyte	Method
Metals		Synthetic Organic Chemicals	
Antimony	Not Certified	Benzo(A)Pyrene	Not Certified
Arsenic	Not Certified	Carbofuran	Not Certified
Barium	Not Certified	DBCP (1,2 Dibromo-3-Chloropropane)	Not Certified
Beryllium	Not Certified	Di(2-Ethylhexyl)Adipate	Not Certified
Cadmium	Not Certified	Di(2-Ethylhexyl)Phthalate	Not Certified
Chromium	Not Certified	Diquat	Not Certified
Copper	Not Certified	EDB (Ethylene Dibromide)	Not Certified
Lead	Not Certified	Endothall	Not Certified
Mercury	Not Certified	Glyphosate	Not Certified
Nickel	Not Certified	Oxamyl (Vydate)	Not Certified
Selenium	Not Certified	PCB (Polychlorinated Biphenyls)	Not Certified
Thallium	Not Certified		
		Disinfection Byproducts	
Inorganics		Bromate	Not Certified
Cyanide	Not Certified	Chlorite	Not Certified
Fluoride	Not Certified	Haloacetic Acids	Not Certified
Nitrate	Not Certified	Total Trihalomethanes	Not Certified
Nitrite	Not Certified	Total Organic Carbon	Not Certified
Volatile Organic Chemicals	Not Certified	Radionuclides	Not Certified
Pesticides		Dioxin	Not Certified
Alachlor (Lasso)	Not Certified		
Atrazine	Not Certified	Asbestos	Not Certified
Bhc-Gamma (Lindane)	Not Certified		
Chlordane	Not Certified	Microbiological	
Endrin	Not Certified	Total Coliform	SM9223B Colilert
Heptachlor	Not Certified	E. Coli	SM9223B Colilert
Heptachlor Epoxide	Not Certified	Cryptosporidium	Not Certified
Hexachlorobenzene	Not Certified	Giardia	Not Certified
Hexachlorocyclopentadiene	Not Certified		
Methoxychlor	Not Certified		
Simazine	Not Certified		
Toxaphene	Not Certified		
Herbicides			
2,4,5-TP (Silvex)	Not Certified		
2,4-D	Not Certified		
Dalapon	Not Certified		
Dinoseb	Not Certified		
Pentachlorophenol	Not Certified		
Picloram	Not Certified		



Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

November 22, 2021

Mrs. Gabrielle Jones-Davis, Quality Manager
Pace Analytical Services, LLC. - Tuscaloosa
3516 Greensboro Avenue
Tuscaloosa, AL 35401

RE: Bacteriological Laboratory Audit
Lab ID #40170

Dear Ms. Jones-Davis:

On August 20, 2021, an onsite audit at the Pace Analytical Services, LLC. – Tuscaloosa bacteriological laboratory was conducted by Ms. Angelica Webb with the Alabama Department of Public Health. After a review of the documentation submitted by the laboratory, a recommendation of continued certification has been made. Enclosed is a copy of that recommendation.

If you should have any questions regarding this matter, please contact me by phone at (334) 271-7775 or by email at bal@adem.alabama.gov.

Sincerely,

A handwritten signature in cursive script that reads "Benny A. Laughlin".

Benny A. Laughlin
Compliance Assurance Section
Drinking Water Branch

Enclosure





Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

November 22, 2021

MEMORANDUM

To: Gabrielle Jones, Quality Manager
Pace Analytical/Tuscaloosa

Through: Benny Laughlin
Drinking Water Branch
Water Division

From: Angelica B. Webb
Alabama Department of Public Health
Laboratory Evaluation Officer

RE: Drinking Water Laboratory Corrective Actions

The Alabama Department of Environmental Management received corrective actions from Pace Analytical/Tuscaloosa. These corrective actions were prepared to address the items listed in a Drinking Water Audit Report dated August 20, 2021.

Their Correctives address all of the items listed on the report. The corrective actions are adequate for analysis of drinking water samples.

If you have any questions or comments concerning this report, please feel free to contact Benny Laughlin at (334) 271-7775 or by email at bal@adem.alabama.gov.





STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Is hereby granting a Louisiana Environmental Laboratory Accreditation to



Pace Analytical Services LLC - New Orleans
1000 Riverbend Blvd Ste F
St. Rose, Louisiana 70087

Agency Interest No. 22756

Activity No. ACC20210002

According to the Louisiana Administrative Code, Title 33, Part I, Subpart 3, LABORATORY ACCREDITATION, the State of Louisiana formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the attachment.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part I, Subpart 3 requirements and agrees to adapt to any changes in the requirements. It also acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part I and the 2009 TNI Standard by which the laboratory was assessed. Please contact the Department of Environmental Quality, Louisiana Environmental Laboratory Accreditation Program (LELAP) to verify the laboratory's scope of accreditation and accreditation status.

Accreditation by the State of Louisiana is not an endorsement or a guarantee of validity of the data generated by the laboratory. Accreditation of the environmental laboratory does not imply that a product, process, system, or person is approved by LELAP. To be accredited initially and maintain accreditation, the laboratory agrees to participate in two single-blind, single-concentration PT studies, where available, per year for each field of testing for which it seeks accreditation or maintains accreditation as required in LAC 33:I.4711.

Cheryl Sonnier Nolan
Administrator
Public Participation and Permit Support Services Division

Issued Date: 30 June 2021
Effective Date: **July 1, 2021**
Expiration Date: **June 30, 2022**
Certificate Number: **02006**



STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Effective Date: July 1, 2021

1000 Riverbend Blvd Ste F, St. Rose, Louisiana 70087

Certificate Number: 02006

Pace Analytical Services LLC - New Orleans

AI Number: 22756

Activity No.: ACC20210002

Expiration Date: June 30, 2022

Air Emissions

Analyte	Method Name	Method Code	Type	AB
NONE	NONE	NONE	NONE	NONE

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
100647 - Ultimate Biochemical Oxygen Demand (UBOD)	SM 5210 C, Online Edition	2836	NELAP	LA
100647 - Ultimate Biochemical Oxygen Demand (UBOD)	SM 5210 C-2011	9325	NELAP	LA
1923 - Reactive Cyanide	EPA 7.3.3.2	10001204	NELAP	LA
1925 - Reactive sulfide	EPA 7.3.4.2	10001408	NELAP	LA
1605 - Color	EPA 110.2	10005604	NELAP	LA
1610 - Conductivity	EPA 120.1	10006209	NELAP	LA
1975 - Salinity	EPA 120.1	10006209	NELAP	LA
1750 - Hardness	EPA 130.2	10007008	NELAP	LA
1755 - Total hardness as CaCO3	EPA 130.2	10007008	NELAP	LA
1900 - pH	EPA 150.1	10008205	NELAP	LA
1955 - Residue-filterable (TDS)	EPA 160.1	10009004	NELAP	LA
1960 - Residue-nonfilterable (TSS)	EPA 160.2	10009402	NELAP	LA
1950 - Residue-total	EPA 160.3	10009800	NELAP	LA
1965 - Residue-settleable	EPA 160.5	10010807	NELAP	LA
2055 - Turbidity	EPA 180.1	10011402	NELAP	LA
1000 - Aluminum	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1005 - Antimony	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1010 - Arsenic	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1015 - Barium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1020 - Beryllium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1025 - Boron	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1030 - Cadmium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1035 - Calcium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1040 - Chromium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1050 - Cobalt	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1055 - Copper	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1070 - Iron	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1075 - Lead	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1085 - Magnesium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1090 - Manganese	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1100 - Molybdenum	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1105 - Nickel	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1125 - Potassium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1140 - Selenium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1150 - Silver	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1155 - Sodium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1160 - Strontium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1165 - Thallium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1175 - Tin	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1180 - Titanium	EPA 200.7, Rev.4.4	10013806	NELAP	LA

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analyte	Method Name	Method Conc	Type	Alt
1185 - Vanadium	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1190 - Zinc	EPA 200.7, Rev.4.4	10013806	NELAP	LA
1000 - Aluminum	EPA 200.7, Rev.5	10014003	NELAP	LA
1005 - Antimony	EPA 200.7, Rev.5	10014003	NELAP	LA
1010 - Arsenic	EPA 200.7, Rev.5	10014003	NELAP	LA
1015 - Barium	EPA 200.7, Rev.5	10014003	NELAP	LA
1020 - Beryllium	EPA 200.7, Rev.5	10014003	NELAP	LA
1025 - Boron	EPA 200.7, Rev.5	10014003	NELAP	LA
1030 - Cadmium	EPA 200.7, Rev.5	10014003	NELAP	LA
1035 - Calcium	EPA 200.7, Rev.5	10014003	NELAP	LA
1040 - Chromium	EPA 200.7, Rev.5	10014003	NELAP	LA
1050 - Cobalt	EPA 200.7, Rev.5	10014003	NELAP	LA
1055 - Copper	EPA 200.7, Rev.5	10014003	NELAP	LA
1070 - Iron	EPA 200.7, Rev.5	10014003	NELAP	LA
1075 - Lead	EPA 200.7, Rev.5	10014003	NELAP	LA
1085 - Magnesium	EPA 200.7, Rev.5	10014003	NELAP	LA
1090 - Manganese	EPA 200.7, Rev.5	10014003	NELAP	LA
1100 - Molybdenum	EPA 200.7, Rev.5	10014003	NELAP	LA
1105 - Nickel	EPA 200.7, Rev.5	10014003	NELAP	LA
1125 - Potassium	EPA 200.7, Rev.5	10014003	NELAP	LA
1140 - Selenium	EPA 200.7, Rev.5	10014003	NELAP	LA
1150 - Silver	EPA 200.7, Rev.5	10014003	NELAP	LA
1155 - Sodium	EPA 200.7, Rev.5	10014003	NELAP	LA
1160 - Strontium	EPA 200.7, Rev.5	10014003	NELAP	LA
1165 - Thallium	EPA 200.7, Rev.5	10014003	NELAP	LA
1175 - Tin	EPA 200.7, Rev.5	10014003	NELAP	LA
1180 - Titanium	EPA 200.7, Rev.5	10014003	NELAP	LA
1185 - Vanadium	EPA 200.7, Rev.5	10014003	NELAP	LA
1190 - Zinc	EPA 200.7, Rev.5	10014003	NELAP	LA
1000 - Aluminum	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1005 - Antimony	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1010 - Arsenic	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1015 - Barium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1020 - Beryllium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1025 - Boron	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1030 - Cadmium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1035 - Calcium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1040 - Chromium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1050 - Cobalt	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1055 - Copper	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1070 - Iron	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1075 - Lead	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1085 - Magnesium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1090 - Manganese	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1095 - Mercury	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1100 - Molybdenum	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1105 - Nickel	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1125 - Potassium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1140 - Selenium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1150 - Silver	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1155 - Sodium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1160 - Strontium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1165 - Thallium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1175 - Tin	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1180 - Titanium	EPA 200.8, Rev.5.4	10014605	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analysis	Method	Valid Through	Agency	State
1185 - Vanadium	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1190 - Zinc	EPA 200.8, Rev.5.4	10014605	NELAP	LA
1095 - Mercury	EPA 245.1	10036609	NELAP	LA
1730 - Fluoride	EPA 300.0, Rev.2.1	10053200	NELAP	LA
1635 - Cyanide	EPA 335.4	10061402	NELAP	LA
1645 - Total Cyanide	EPA 335.4	10061402	NELAP	LA
1515 - Ammonia as N	EPA 350.1, Rev.2	10063602	NELAP	LA
1865 - Organic nitrogen	EPA 350.1, Rev.2	10063602	NELAP	LA
1795 - Kjeldahl nitrogen - total	EPA 351.2, Rev.2	10065404	NELAP	LA
1865 - Organic nitrogen	EPA 351.2, Rev.2	10065404	NELAP	LA
1805 - Nitrate	EPA 353.2, Rev.2	10067604	NELAP	LA
1810 - Nitrate as N	EPA 353.2, Rev.2	10067604	NELAP	LA
1820 - Nitrate-Nitrite	EPA 353.2, Rev.2	10067604	NELAP	LA
1835 - Nitrite	EPA 353.2, Rev.2	10067604	NELAP	LA
1840 - Nitrite as N	EPA 353.2, Rev.2	10067604	NELAP	LA
1825 - Total Nitrate+Nitrite	EPA 353.2, Rev.2	10067604	NELAP	LA
1870 - Orthophosphate as P	EPA 365.3	10070801	NELAP	LA
1910 - Total Phosphorus	EPA 365.4	10071202	NELAP	LA
2005 - Sulfide	EPA 376.2	10074405	NELAP	LA
1565 - Chemical oxygen demand	EPA 410.4, Rev.2	10077404	NELAP	LA
1905 - Total Phenolics	EPA 420.1	10079400	NELAP	LA
1905 - Total Phenolics	EPA 420.4, Rev.1	10080203	NELAP	LA
4375 - Benzene	EPA 602	10102202	NELAP	LA
4765 - Ethylbenzene	EPA 602	10102202	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 602	10102202	NELAP	LA
5140 - Toluene	EPA 602	10102202	NELAP	LA
5260 - Xylene (total)	EPA 602	10102202	NELAP	LA
5240 - m+p-xylene	EPA 602	10102202	NELAP	LA
5250 - o-Xylene	EPA 602	10102202	NELAP	LA
1466 - Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311	10118806	NELAP	LA
1460 - Synthetic Precipitation Leaching Procedure	EPA 1312	10119003	NELAP	LA
1401 - Acid Digestion of waters for Total Recoverable or Dissolved Metals	EPA 3005	10133003	NELAP	LA
1401 - Acid Digestion of waters for Total Recoverable or Dissolved Metals	EPA 3005A	10133207	NELAP	LA
1401 - Acid Digestion of Aqueous samples and Extracts for Total Metals	EPA 3010	10133401	NELAP	LA
1401 - Acid Digestion of Aqueous samples and Extracts for Total Metals	EPA 3010A	10133605	NELAP	LA
1401 - Acid Digestion of Aqueous samples and Extracts for Total Metals for Analysis by GFAA	EPA 3020A	10134404	NELAP	LA
1444 - Separatory Funnel Liquid-liquid extraction	EPA 3510C	10138202	NELAP	LA
1410 - Continuous Liquid-liquid extraction	EPA 3520C	10139001	NELAP	LA
1448 - Solid-Phase Extraction (SPE)	EPA 3535A	10139409	NELAP	LA
1406 - Purge and trap for aqueous phase samples	EPA 5030B	10153409	NELAP	LA
1450 - Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples	EPA 5035	10154004	NELAP	LA
1000 - Aluminum	EPA 6010B	10155609	NELAP	LA
1005 - Antimony	EPA 6010B	10155609	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analysis	Method Name	Method Code	Agency	State
1010 - Arsenic	EPA 6010B	10155609	NELAP	LA
1015 - Barium	EPA 6010B	10155609	NELAP	LA
1020 - Beryllium	EPA 6010B	10155609	NELAP	LA
1025 - Boron	EPA 6010B	10155609	NELAP	LA
1030 - Cadmium	EPA 6010B	10155609	NELAP	LA
1035 - Calcium	EPA 6010B	10155609	NELAP	LA
1040 - Chromium	EPA 6010B	10155609	NELAP	LA
1050 - Cobalt	EPA 6010B	10155609	NELAP	LA
1055 - Copper	EPA 6010B	10155609	NELAP	LA
1070 - Iron	EPA 6010B	10155609	NELAP	LA
1075 - Lead	EPA 6010B	10155609	NELAP	LA
1080 - Lithium	EPA 6010B	10155609	NELAP	LA
1085 - Magnesium	EPA 6010B	10155609	NELAP	LA
1090 - Manganese	EPA 6010B	10155609	NELAP	LA
1100 - Molybdenum	EPA 6010B	10155609	NELAP	LA
1105 - Nickel	EPA 6010B	10155609	NELAP	LA
1125 - Potassium	EPA 6010B	10155609	NELAP	LA
1140 - Selenium	EPA 6010B	10155609	NELAP	LA
1150 - Silver	EPA 6010B	10155609	NELAP	LA
1155 - Sodium	EPA 6010B	10155609	NELAP	LA
1160 - Strontium	EPA 6010B	10155609	NELAP	LA
1165 - Thallium	EPA 6010B	10155609	NELAP	LA
1175 - Tin	EPA 6010B	10155609	NELAP	LA
1180 - Titanium	EPA 6010B	10155609	NELAP	LA
1185 - Vanadium	EPA 6010B	10155609	NELAP	LA
1190 - Zinc	EPA 6010B	10155609	NELAP	LA
1000 - Aluminum	EPA 6010C	10155803	NELAP	LA
1005 - Antimony	EPA 6010C	10155803	NELAP	LA
1010 - Arsenic	EPA 6010C	10155803	NELAP	LA
1015 - Barium	EPA 6010C	10155803	NELAP	LA
1020 - Beryllium	EPA 6010C	10155803	NELAP	LA
1025 - Boron	EPA 6010C	10155803	NELAP	LA
1030 - Cadmium	EPA 6010C	10155803	NELAP	LA
1035 - Calcium	EPA 6010C	10155803	NELAP	LA
1040 - Chromium	EPA 6010C	10155803	NELAP	LA
1050 - Cobalt	EPA 6010C	10155803	NELAP	LA
1055 - Copper	EPA 6010C	10155803	NELAP	LA
1070 - Iron	EPA 6010C	10155803	NELAP	LA
1075 - Lead	EPA 6010C	10155803	NELAP	LA
1080 - Lithium	EPA 6010C	10155803	NELAP	LA
1085 - Magnesium	EPA 6010C	10155803	NELAP	LA
1090 - Manganese	EPA 6010C	10155803	NELAP	LA
1100 - Molybdenum	EPA 6010C	10155803	NELAP	LA
1105 - Nickel	EPA 6010C	10155803	NELAP	LA
1125 - Potassium	EPA 6010C	10155803	NELAP	LA
1140 - Selenium	EPA 6010C	10155803	NELAP	LA
1150 - Silver	EPA 6010C	10155803	NELAP	LA
1155 - Sodium	EPA 6010C	10155803	NELAP	LA
1160 - Strontium	EPA 6010C	10155803	NELAP	LA
1165 - Thallium	EPA 6010C	10155803	NELAP	LA
1175 - Tin	EPA 6010C	10155803	NELAP	LA
1180 - Titanium	EPA 6010C	10155803	NELAP	LA
1185 - Vanadium	EPA 6010C	10155803	NELAP	LA
1190 - Zinc	EPA 6010C	10155803	NELAP	LA
1000 - Aluminum	EPA 6020A	10156408	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analysis	Method	Method Code	Unit	Abv
1005 - Antimony	EPA 6020A	10156408	NELAP	LA
1010 - Arsenic	EPA 6020A	10156408	NELAP	LA
1015 - Barium	EPA 6020A	10156408	NELAP	LA
1020 - Beryllium	EPA 6020A	10156408	NELAP	LA
1025 - Boron	EPA 6020A	10156408	NELAP	LA
1030 - Cadmium	EPA 6020A	10156408	NELAP	LA
1035 - Calcium	EPA 6020A	10156408	NELAP	LA
1040 - Chromium	EPA 6020A	10156408	NELAP	LA
1050 - Cobalt	EPA 6020A	10156408	NELAP	LA
1055 - Copper	EPA 6020A	10156408	NELAP	LA
1070 - Iron	EPA 6020A	10156408	NELAP	LA
1075 - Lead	EPA 6020A	10156408	NELAP	LA
1085 - Magnesium	EPA 6020A	10156408	NELAP	LA
1090 - Manganese	EPA 6020A	10156408	NELAP	LA
1095 - Mercury	EPA 6020A	10156408	NELAP	LA
1100 - Molybdenum	EPA 6020A	10156408	NELAP	LA
1105 - Nickel	EPA 6020A	10156408	NELAP	LA
1125 - Potassium	EPA 6020A	10156408	NELAP	LA
1140 - Selenium	EPA 6020A	10156408	NELAP	LA
1155 - Sodium	EPA 6020A	10156408	NELAP	LA
1160 - Strontium	EPA 6020A	10156408	NELAP	LA
1165 - Thallium	EPA 6020A	10156408	NELAP	LA
1180 - Titanium	EPA 6020A	10156408	NELAP	LA
1185 - Vanadium	EPA 6020A	10156408	NELAP	LA
1190 - Zinc	EPA 6020A	10156408	NELAP	LA
1045 - Chromium VI	EPA 7196	10162206	NELAP	LA
1045 - Chromium VI	EPA 7196A	10162400	NELAP	LA
1095 - Mercury	EPA 7470	10165603	NELAP	LA
1095 - Mercury	EPA 7470A	10165807	NELAP	LA
4350 - Allyl alcohol	EPA 8015C, Rev.3	10173816	NELAP	LA
9369 - Diesel range organics (DRO)	EPA 8015C, Rev.3	10173816	NELAP	LA
4750 - Ethanol	EPA 8015C, Rev.3	10173816	NELAP	LA
9408 - Gasoline range organics (GRO)	EPA 8015C, Rev.3	10173816	NELAP	LA
4875 - Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8015C, Rev.3	10173816	NELAP	LA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8015C, Rev.3	10173816	NELAP	LA
4930 - Methanol	EPA 8015C, Rev.3	10173816	NELAP	LA
6748 - Oil-Range Organics (ORO)	EPA 8015C, Rev.3	10173816	NELAP	LA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8015C, Rev.3	10173816	NELAP	LA
5055 - n-Propanol (1-Propanol)	EPA 8015C, Rev.3	10173816	NELAP	LA
4375 - Benzene	EPA 8021	10174400	NELAP	LA
4765 - Ethylbenzene	EPA 8021	10174400	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021	10174400	NELAP	LA
5140 - Toluene	EPA 8021	10174400	NELAP	LA
5260 - Xylene (total)	EPA 8021	10174400	NELAP	LA
5240 - m+p-xylene	EPA 8021	10174400	NELAP	LA
5250 - o-Xylene	EPA 8021	10174400	NELAP	LA
4375 - Benzene	EPA 8021A	10174604	NELAP	LA
4765 - Ethylbenzene	EPA 8021A	10174604	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021A	10174604	NELAP	LA
5140 - Toluene	EPA 8021A	10174604	NELAP	LA
5260 - Xylene (total)	EPA 8021A	10174604	NELAP	LA
5240 - m+p-xylene	EPA 8021A	10174604	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Sample Name	EPA Method	Method Code	Lab	Unit
5250 - o-Xylene	EPA 8021A	10174604	NELAP	LA
4375 - Benzene	EPA 8021B	10174808	NELAP	LA
4765 - Ethylbenzene	EPA 8021B	10174808	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021B	10174808	NELAP	LA
5140 - Toluene	EPA 8021B	10174808	NELAP	LA
5260 - Xylene (total)	EPA 8021B	10174808	NELAP	LA
5240 - m+p-xylene	EPA 8021B	10174808	NELAP	LA
5250 - o-Xylene	EPA 8021B	10174808	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082	10179007	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082	10179007	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082	10179007	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082	10179007	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082	10179007	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082	10179007	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082	10179007	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082A	10179201	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082A	10179201	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082A	10179201	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082A	10179201	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082A	10179201	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082A	10179201	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082A	10179201	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA 8260B	10184802	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	LA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260B	10184802	NELAP	LA
5195 - 1,1,2-Trichloro-2,2,2-trifluoroethane (Freon 113a)	EPA 8260B	10184802	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA 8260B	10184802	NELAP	LA
4630 - 1,1-Dichloroethane	EPA 8260B	10184802	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4670 - 1,1-Dichloropropene	EPA 8260B	10184802	NELAP	LA
5150 - 1,2,3-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA 8260B	10184802	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA 8260B	10184802	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260B	10184802	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260B	10184802	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260B	10184802	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 8260B	10184802	NELAP	LA
6800 - 1,3,5-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA 8260B	10184802	NELAP	LA
9318 - 1,3-Butadiene	EPA 8260B	10184802	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4660 - 1,3-Dichloropropane	EPA 8260B	10184802	NELAP	LA
4735 - 1,4-Dioxane (1,4-Diethyleneoxide)	EPA 8260B	10184802	NELAP	LA
100276 - 1-Chloro-2-methylpropane	EPA 8260B	10184802	NELAP	LA
4480 - 1-Chlorobutane	EPA 8260B	10184802	NELAP	LA
4510 - 1-Chlorohexane	EPA 8260B	10184802	NELAP	LA
5220 - 2,2,4-Trimethylpentane (Isooctane)	EPA 8260B	10184802	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analysis Name	EPA Method	Method Code	Lab	City
4665 - 2,2-Dichloropropane	EPA 8260B	10184802	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260B	10184802	NELAP	LA
4490 - 2-Chloroethanol	EPA 8260B	10184802	NELAP	LA
4500 - 2-Chloroethyl vinyl ether	EPA 8260B	10184802	NELAP	LA
4535 - 2-Chlorotoluene	EPA 8260B	10184802	NELAP	LA
4860 - 2-Hexanone	EPA 8260B	10184802	NELAP	LA
4937 - 2-Methylbutadiene (Isoprene)	EPA 8260B	10184802	NELAP	LA
4938 - 2-Methylbutane (Isopentane)	EPA 8260B	10184802	NELAP	LA
4941 - 2-Methylpentane (Isohexane)	EPA 8260B	10184802	NELAP	LA
5020 - 2-Nitropropane	EPA 8260B	10184802	NELAP	LA
5045 - 2-Pentanone	EPA 8260B	10184802	NELAP	LA
4534 - 3-Methylpentane	EPA 8260B	10184802	NELAP	LA
4540 - 4-Chlorotoluene	EPA 8260B	10184802	NELAP	LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260B	10184802	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260B	10184802	NELAP	LA
100222 - 4-Methylstyrene	EPA 8260B	10184802	NELAP	LA
4315 - Acetone	EPA 8260B	10184802	NELAP	LA
4320 - Acetonitrile	EPA 8260B	10184802	NELAP	LA
4325 - Acrolein (Propenal)	EPA 8260B	10184802	NELAP	LA
4340 - Acrylonitrile	EPA 8260B	10184802	NELAP	LA
4350 - Allyl alcohol	EPA 8260B	10184802	NELAP	LA
4355 - Allyl chloride (3-Chloropropene)	EPA 8260B	10184802	NELAP	LA
4375 - Benzene	EPA 8260B	10184802	NELAP	LA
100223 - Benzoyl chloride	EPA 8260B	10184802	NELAP	LA
5635 - Benzyl chloride	EPA 8260B	10184802	NELAP	LA
4385 - Bromobenzene	EPA 8260B	10184802	NELAP	LA
4390 - Bromochloromethane	EPA 8260B	10184802	NELAP	LA
4395 - Bromodichloromethane	EPA 8260B	10184802	NELAP	LA
4400 - Bromoform	EPA 8260B	10184802	NELAP	LA
4450 - Carbon disulfide	EPA 8260B	10184802	NELAP	LA
4455 - Carbon tetrachloride	EPA 8260B	10184802	NELAP	LA
4475 - Chlorobenzene	EPA 8260B	10184802	NELAP	LA
4575 - Chlorodibromomethane (dibromochloromethane)	EPA 8260B	10184802	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 8260B	10184802	NELAP	LA
4505 - Chloroform	EPA 8260B	10184802	NELAP	LA
4525 - Chloroprene (2-Chloro-1,3-butadiene)	EPA 8260B	10184802	NELAP	LA
4555 - Cyclohexane	EPA 8260B	10184802	NELAP	LA
4560 - Cyclohexanone	EPA 8260B	10184802	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260B	10184802	NELAP	LA
4590 - Dibromofluoromethane	EPA 8260B	10184802	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 8260B	10184802	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260B	10184802	NELAP	LA
4653 - Dicyclopentadiene	EPA 8260B	10184802	NELAP	LA
4725 - Diethyl ether	EPA 8260B	10184802	NELAP	LA
4745 - Epichlorohydrin (1-Chloro-2,3-epoxypropane)	EPA 8260B	10184802	NELAP	LA
4750 - Ethanol	EPA 8260B	10184802	NELAP	LA
4755 - Ethyl acetate	EPA 8260B	10184802	NELAP	LA
4810 - Ethyl methacrylate	EPA 8260B	10184802	NELAP	LA
4765 - Ethylbenzene	EPA 8260B	10184802	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Chemical Name	EPA Method	Method Code	Agency	Lab
7645 - Furfural	EPA 8260B	10184802	NELAP	LA
4825 - Heptane	EPA 8260B	10184802	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8260B	10184802	NELAP	LA
4870 - Iodomethane (Methyl iodide)	EPA 8260B	10184802	NELAP	LA
4875 - Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260B	10184802	NELAP	LA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8260B	10184802	NELAP	LA
4900 - Isopropylbenzene (Cumene)	EPA 8260B	10184802	NELAP	LA
4925 - Methacrylonitrile	EPA 8260B	10184802	NELAP	LA
4940 - Methyl acetate	EPA 8260B	10184802	NELAP	LA
4945 - Methyl acrylate	EPA 8260B	10184802	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 8260B	10184802	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 8260B	10184802	NELAP	LA
4990 - Methyl methacrylate	EPA 8260B	10184802	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260B	10184802	NELAP	LA
4965 - Methylcyclohexane	EPA 8260B	10184802	NELAP	LA
4966 - Methylcyclopentane	EPA 8260B	10184802	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 8260B	10184802	NELAP	LA
5005 - Naphthalene	EPA 8260B	10184802	NELAP	LA
5015 - Nitrobenzene	EPA 8260B	10184802	NELAP	LA
5035 - Pentachloroethane	EPA 8260B	10184802	NELAP	LA
5040 - Pentafluorobenzene	EPA 8260B	10184802	NELAP	LA
5028 - Pentane	EPA 8260B	10184802	NELAP	LA
5080 - Propionitrile (Ethyl cyanide)	EPA 8260B	10184802	NELAP	LA
5100 - Styrene	EPA 8260B	10184802	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260B	10184802	NELAP	LA
5120 - Tetrahydrofuran (THF)	EPA 8260B	10184802	NELAP	LA
9574 - Tetrahydrothiophene	EPA 8260B	10184802	NELAP	LA
5140 - Toluene	EPA 8260B	10184802	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260B	10184802	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260B	10184802	NELAP	LA
5225 - Vinyl acetate	EPA 8260B	10184802	NELAP	LA
5235 - Vinyl chloride	EPA 8260B	10184802	NELAP	LA
5260 - Xylene (total)	EPA 8260B	10184802	NELAP	LA
4705 - cis & trans-1,2-Dichloroethene	EPA 8260B	10184802	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 8260B	10184802	NELAP	LA
4600 - cis-1,4-Dichloro-2-butene	EPA 8260B	10184802	NELAP	LA
5240 - m+p-xylene	EPA 8260B	10184802	NELAP	LA
5245 - m-Xylene	EPA 8260B	10184802	NELAP	LA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8260B	10184802	NELAP	LA
4435 - n-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4855 - n-Hexane	EPA 8260B	10184802	NELAP	LA
5055 - n-Propanol (1-Propanol)	EPA 8260B	10184802	NELAP	LA
100273 - n-Propylacetate	EPA 8260B	10184802	NELAP	LA
5090 - n-Propylbenzene	EPA 8260B	10184802	NELAP	LA
5250 - o-Xylene	EPA 8260B	10184802	NELAP	LA
5255 - p-Xylene	EPA 8260B	10184802	NELAP	LA
4440 - sec-Butylbenzene	EPA 8260B	10184802	NELAP	LA
100275 - sec-Butylether	EPA 8260B	10184802	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Material Name	Material Name	Material Code	Lab	City
4420 - tert-Butyl alcohol	EPA 8260B	10184802	NELAP	LA
4445 - tert-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA 8260B	10184802	NELAP	LA
4605 - trans-1,4-Dichloro-2-butene	EPA 8260B	10184802	NELAP	LA
9335 - 1-Methyl-2-pyrrolidinone (NMP)	EPA 8270C	10185805	NELAP	LA
100808 - Carbanilide (1,3-Dephenylurea)	EPA 8270C	10185805	NELAP	LA
6705 - 1,2,3,4-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	LA
6710 - 1,2,3,5-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	LA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8270C	10185805	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8270C	10185805	NELAP	LA
6220 - 1,2-Diphenylhydrazine	EPA 8270C	10185805	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8270C	10185805	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270C	10185805	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8270C	10185805	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270C	10185805	NELAP	LA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270C	10185805	NELAP	LA
6740 - 2,3,5,6-Tetrachlorophenol	EPA 8270C	10185805	NELAP	LA
5983 - 2,3-Dichlorophenol	EPA 8270C	10185805	NELAP	LA
6835 - 2,4,5-Trichlorophenol	EPA 8270C	10185805	NELAP	LA
6840 - 2,4,6-Trichlorophenol	EPA 8270C	10185805	NELAP	LA
6000 - 2,4-Dichlorophenol	EPA 8270C	10185805	NELAP	LA
6130 - 2,4-Dimethylphenol	EPA 8270C	10185805	NELAP	LA
6175 - 2,4-Dinitrophenol	EPA 8270C	10185805	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270C	10185805	NELAP	LA
5992 - 2,5-Dichlorophenol	EPA 8270C	10185805	NELAP	LA
6005 - 2,6-Dichlorophenol	EPA 8270C	10185805	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270C	10185805	NELAP	LA
5795 - 2-Chloronaphthalene	EPA 8270C	10185805	NELAP	LA
5800 - 2-Chlorophenol	EPA 8270C	10185805	NELAP	LA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270C	10185805	NELAP	LA
5145 - 2-Methylaniline (o-Toluidine)	EPA 8270C	10185805	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270C	10185805	NELAP	LA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270C	10185805	NELAP	LA
6460 - 2-Nitroaniline	EPA 8270C	10185805	NELAP	LA
6490 - 2-Nitrophenol	EPA 8270C	10185805	NELAP	LA
100487 - 2-Phenyl isopropanol (a-a-dimethylbenzyl alcohol)	EPA 8270C	10185805	NELAP	LA
5945 - 3,3'-Dichlorobenzidine	EPA 8270C	10185805	NELAP	LA
5997 - 3,4-Dichlorophenol	EPA 8270C	10185805	NELAP	LA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270C	10185805	NELAP	LA
6465 - 3-Nitroaniline	EPA 8270C	10185805	NELAP	LA
9489 - 4,4'-Methylenedianiline	EPA 8270C	10185805	NELAP	LA
5540 - 4-Aminobiphenyl	EPA 8270C	10185805	NELAP	LA
5660 - 4-Bromophenyl phenyl ether	EPA 8270C	10185805	NELAP	LA
5700 - 4-Chloro-3-methylphenol	EPA 8270C	10185805	NELAP	LA
5745 - 4-Chloroaniline	EPA 8270C	10185805	NELAP	LA
5805 - 4-Chlorophenol	EPA 8270C	10185805	NELAP	LA
5825 - 4-Chlorophenyl phenylether	EPA 8270C	10185805	NELAP	LA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270C	10185805	NELAP	LA
6470 - 4-Nitroaniline	EPA 8270C	10185805	NELAP	LA
6500 - 4-Nitrophenol	EPA 8270C	10185805	NELAP	LA
6570 - 5-Nitro-o-toluidine	EPA 8270C	10185805	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

AI Number	Method Name	Method Code	Agency	Lab
6115 - 7,12-Dimethylbenz(a) anthracene	EPA 8270C	10185805	NELAP	LA
5500 - Acenaphthene	EPA 8270C	10185805	NELAP	LA
5505 - Acenaphthylene	EPA 8270C	10185805	NELAP	LA
5510 - Acetophenone	EPA 8270C	10185805	NELAP	LA
5545 - Aniline	EPA 8270C	10185805	NELAP	LA
5555 - Anthracene	EPA 8270C	10185805	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270C	10185805	NELAP	LA
5595 - Benzidine	EPA 8270C	10185805	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270C	10185805	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270C	10185805	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270C	10185805	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270C	10185805	NELAP	LA
5610 - Benzoic acid	EPA 8270C	10185805	NELAP	LA
5630 - Benzyl alcohol	EPA 8270C	10185805	NELAP	LA
5640 - Biphenyl (1,1'-Biphenyl)	EPA 8270C	10185805	NELAP	LA
5780 - Bis(2-Chloroisopropyl) ether (2,2-oxybis(1-chloropropane))	EPA 8270C	10185805	NELAP	LA
5670 - Butyl benzyl phthalate	EPA 8270C	10185805	NELAP	LA
5680 - Carbazole	EPA 8270C	10185805	NELAP	LA
5855 - Chrysene	EPA 8270C	10185805	NELAP	LA
8906 - Coelution - 3-Chlorophenol + 4-Chlorophenol	EPA 8270C	10185805	NELAP	LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270C	10185805	NELAP	LA
5925 - Di-n-butyl phthalate	EPA 8270C	10185805	NELAP	LA
6200 - Di-n-octyl phthalate	EPA 8270C	10185805	NELAP	LA
9354 - Dibenz(a, h) acridine	EPA 8270C	10185805	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270C	10185805	NELAP	LA
5905 - Dibenzofuran	EPA 8270C	10185805	NELAP	LA
6070 - Diethyl phthalate	EPA 8270C	10185805	NELAP	LA
6135 - Dimethyl phthalate	EPA 8270C	10185805	NELAP	LA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270C	10185805	NELAP	LA
6210 - Diphenyl ether (Diphenyl Oxide)	EPA 8270C	10185805	NELAP	LA
6205 - Diphenylamine	EPA 8270C	10185805	NELAP	LA
6265 - Fluoranthene	EPA 8270C	10185805	NELAP	LA
6270 - Fluorene	EPA 8270C	10185805	NELAP	LA
6275 - Hexachlorobenzene	EPA 8270C	10185805	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8270C	10185805	NELAP	LA
6285 - Hexachlorocyclopentadiene	EPA 8270C	10185805	NELAP	LA
4840 - Hexachloroethane	EPA 8270C	10185805	NELAP	LA
6312 - Indene	EPA 8270C	10185805	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270C	10185805	NELAP	LA
6320 - Isophorone	EPA 8270C	10185805	NELAP	LA
5005 - Naphthalene	EPA 8270C	10185805	NELAP	LA
5015 - Nitrobenzene	EPA 8270C	10185805	NELAP	LA
6605 - Pentachlorophenol	EPA 8270C	10185805	NELAP	LA
6615 - Phenanthrene	EPA 8270C	10185805	NELAP	LA
6625 - Phenol	EPA 8270C	10185805	NELAP	LA
8075 - Propham	EPA 8270C	10185805	NELAP	LA
6665 - Pyrene	EPA 8270C	10185805	NELAP	LA
5095 - Pyridine	EPA 8270C	10185805	NELAP	LA
6670 - Quinoline	EPA 8270C	10185805	NELAP	LA
100199 - Sulfolane	EPA 8270C	10185805	NELAP	LA
6750 - Thiophenol (Benzenethiol)	EPA 8270C	10185805	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analysis	Method Name	Method Code	Agency	Lab
5862 - Total Cresols	EPA 8270C	10185805	NELAP	LA
4357 - alpha-Methylstyrene	EPA 8270C	10185805	NELAP	LA
5760 - bis(2-Chloroethoxy)methane	EPA 8270C	10185805	NELAP	LA
5765 - bis(2-Chloroethyl) ether	EPA 8270C	10185805	NELAP	LA
6545 - n-Nitrosodi-n-propylamine	EPA 8270C	10185805	NELAP	LA
6530 - n-Nitrosodimethylamine	EPA 8270C	10185805	NELAP	LA
6535 - n-Nitrosodiphenylamine	EPA 8270C	10185805	NELAP	LA
100488 - p-Cumyl phenol (4-(1-methyl-1-phenylethyl)phenol)	EPA 8270C	10185805	NELAP	LA
9335 - 1-Methyl-2-pyrrolidinone (NMP)	EPA 8270D	10186002	NELAP	LA
6705 - 1,2,3,4-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
6710 - 1,2,3,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8270D	10186002	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6220 - 1,2-Diphenylhydrazine	EPA 8270D	10186002	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D	10186002	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	LA
6740 - 2,3,5,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	LA
5983 - 2,3-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6835 - 2,4,5-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
6840 - 2,4,6-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
6000 - 2,4-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6130 - 2,4-Dimethylphenol	EPA 8270D	10186002	NELAP	LA
6175 - 2,4-Dinitrophenol	EPA 8270D	10186002	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	10186002	NELAP	LA
5992 - 2,5-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6005 - 2,6-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	10186002	NELAP	LA
5795 - 2-Chloronaphthalene	EPA 8270D	10186002	NELAP	LA
5800 - 2-Chlorophenol	EPA 8270D	10186002	NELAP	LA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270D	10186002	NELAP	LA
5145 - 2-Methylaniline (o-Toluidine)	EPA 8270D	10186002	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270D	10186002	NELAP	LA
6460 - 2-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6490 - 2-Nitrophenol	EPA 8270D	10186002	NELAP	LA
100487 - 2-Phenyl isopropanol (a-a-dimethylbenzyl alcohol)	EPA 8270D	10186002	NELAP	LA
6412 - 3+4 Methylphenol	EPA 8270D	10186002	NELAP	LA
5945 - 3,3'-Dichlorobenzidine	EPA 8270D	10186002	NELAP	LA
5997 - 3,4-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
4742 - 3-Chlorophenol	EPA 8270D	10186002	NELAP	LA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270D	10186002	NELAP	LA
6465 - 3-Nitroaniline	EPA 8270D	10186002	NELAP	LA
5540 - 4-Aminobiphenyl	EPA 8270D	10186002	NELAP	LA
5660 - 4-Bromophenyl phenyl ether	EPA 8270D	10186002	NELAP	LA
5700 - 4-Chloro-3-methylphenol	EPA 8270D	10186002	NELAP	LA
5745 - 4-Chloroaniline	EPA 8270D	10186002	NELAP	LA
5805 - 4-Chlorophenol	EPA 8270D	10186002	NELAP	LA
5825 - 4-Chlorophenyl phenylether	EPA 8270D	10186002	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Method Name	Method ID	Lab	Acc
6410 - 4-Methylphenol (p-Cresol)	EPA 8270D	10186002	NELAP LA
6470 - 4-Nitroaniline	EPA 8270D	10186002	NELAP LA
6500 - 4-Nitrophenol	EPA 8270D	10186002	NELAP LA
6570 - 5-Nitro-o-toluidine	EPA 8270D	10186002	NELAP LA
6115 - 7,12-Dimethylbenz(a) anthracene	EPA 8270D	10186002	NELAP LA
5500 - Acenaphthene	EPA 8270D	10186002	NELAP LA
5505 - Acenaphthylene	EPA 8270D	10186002	NELAP LA
5510 - Acetophenone	EPA 8270D	10186002	NELAP LA
5545 - Aniline	EPA 8270D	10186002	NELAP LA
5555 - Anthracene	EPA 8270D	10186002	NELAP LA
5575 - Benz(a)anthracene	EPA 8270D	10186002	NELAP LA
5595 - Benzidine	EPA 8270D	10186002	NELAP LA
5580 - Benzo(a)pyrene	EPA 8270D	10186002	NELAP LA
5585 - Benzo(b)fluoranthene	EPA 8270D	10186002	NELAP LA
5590 - Benzo(g,h,i)perylene	EPA 8270D	10186002	NELAP LA
5600 - Benzo(k)fluoranthene	EPA 8270D	10186002	NELAP LA
5610 - Benzoic acid	EPA 8270D	10186002	NELAP LA
5630 - Benzyl alcohol	EPA 8270D	10186002	NELAP LA
5640 - Biphenyl (1,1'-Biphenyl)	EPA 8270D	10186002	NELAP LA
5780 - Bis(2-Chloroisopropyl) ether (2,2-oxybis(1-chloropropane))	EPA 8270D	10186002	NELAP LA
5670 - Butyl benzyl phthalate	EPA 8270D	10186002	NELAP LA
5680 - Carbazole	EPA 8270D	10186002	NELAP LA
5855 - Chrysene	EPA 8270D	10186002	NELAP LA
8906 - Coelution - 3-Chlorophenol + 4-Chlorophenol	EPA 8270D	10186002	NELAP LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270D	10186002	NELAP LA
5925 - Di-n-butyl phthalate	EPA 8270D	10186002	NELAP LA
6200 - Di-n-octyl phthalate	EPA 8270D	10186002	NELAP LA
9354 - Dibenz(a, h) acridine	EPA 8270D	10186002	NELAP LA
5895 - Dibenz(a,h)anthracene	EPA 8270D	10186002	NELAP LA
5905 - Dibenzofuran	EPA 8270D	10186002	NELAP LA
6070 - Diethyl phthalate	EPA 8270D	10186002	NELAP LA
6135 - Dimethyl phthalate	EPA 8270D	10186002	NELAP LA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270D	10186002	NELAP LA
6210 - Diphenyl ether (Diphenyl Oxide)	EPA 8270D	10186002	NELAP LA
6205 - Diphenylamine	EPA 8270D	10186002	NELAP LA
6265 - Fluoranthene	EPA 8270D	10186002	NELAP LA
6270 - Fluorene	EPA 8270D	10186002	NELAP LA
6275 - Hexachlorobenzene	EPA 8270D	10186002	NELAP LA
4835 - Hexachlorobutadiene	EPA 8270D	10186002	NELAP LA
6285 - Hexachlorocyclopentadiene	EPA 8270D	10186002	NELAP LA
4840 - Hexachloroethane	EPA 8270D	10186002	NELAP LA
6312 - Indene	EPA 8270D	10186002	NELAP LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D	10186002	NELAP LA
6320 - Isophorone	EPA 8270D	10186002	NELAP LA
5005 - Naphthalene	EPA 8270D	10186002	NELAP LA
5015 - Nitrobenzene	EPA 8270D	10186002	NELAP LA
6605 - Pentachlorophenol	EPA 8270D	10186002	NELAP LA
6615 - Phenanthrene	EPA 8270D	10186002	NELAP LA
6625 - Phenol	EPA 8270D	10186002	NELAP LA
6665 - Pyrene	EPA 8270D	10186002	NELAP LA
5095 - Pyridine	EPA 8270D	10186002	NELAP LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analyte	Method Name	Method Code	Lab	AI
6670 - Quinoline	EPA 8270D	10186002	NELAP	LA
100199 - Sulfolane	EPA 8270D	10186002	NELAP	LA
6750 - Thiophenol (Benzenethiol)	EPA 8270D	10186002	NELAP	LA
5862 - Total Cresols	EPA 8270D	10186002	NELAP	LA
4357 - alpha-Methylstyrene	EPA 8270D	10186002	NELAP	LA
5760 - bis(2-Chloroethoxy)methane	EPA 8270D	10186002	NELAP	LA
5765 - bis(2-Chloroethyl) ether	EPA 8270D	10186002	NELAP	LA
6545 - n-Nitrosodi-n-propylamine	EPA 8270D	10186002	NELAP	LA
6530 - n-Nitrosodimethylamine	EPA 8270D	10186002	NELAP	LA
6535 - n-Nitrosodiphenylamine	EPA 8270D	10186002	NELAP	LA
100488 - p-Cumyl phenol (4-(1-methyl-1-phenylethyl)phenol)	EPA 8270D	10186002	NELAP	LA
100808 - Carbanilide (1,3-Dephenylurea)	EPA 8270D	10186035	NELAP	LA
9489 - 4,4'-Methylenedianiline	EPA 8270D	10186035	NELAP	LA
8075 - Prophan	EPA 8270D	10186035	NELAP	LA
1510 - Amenable cyanide	EPA 9010	10192606	NELAP	LA
1645 - Total Cyanide	EPA 9010	10192606	NELAP	LA
1645 - Total Cyanide	EPA 9010B	10193007	NELAP	LA
1510 - Amenable cyanide	EPA 9012A	10193405	NELAP	LA
1645 - Total Cyanide	EPA 9012A	10193405	NELAP	LA
2005 - Sulfide	EPA 9030A	10195401	NELAP	LA
2010 - Total Sulfides	EPA 9034	10196006	NELAP	LA
2000 - Sulfate	EPA 9038	10196608	NELAP	LA
1900 - pH	EPA 9040B	10197203	NELAP	LA
1610 - Conductivity	EPA 9050	10198604	NELAP	LA
1610 - Conductivity	EPA 9050A	10198808	NELAP	LA
1730 - Fluoride	EPA 9056	10199005	NELAP	LA
1730 - Fluoride	EPA 9056A	10199607	NELAP	LA
1710 - Dissolved organic carbon (DOC)	EPA 9060	10200201	NELAP	LA
2040 - Total Organic Carbon	EPA 9060	10200201	NELAP	LA
1905 - Total Phenolics	EPA 9065	10200405	NELAP	LA
1905 - Total Phenolics	EPA 9066	10200609	NELAP	LA
1575 - Chloride	EPA 9251	10207406	NELAP	LA
1865 - Organic nitrogen	EPA 351.2 minus EPA 350.1	10238207	NELAP	LA
1865 - Organic nitrogen	EPA 351.2 minus SM 4500-NH3 G-2011	10238252	NELAP	LA
1810 - Nitrate as N	EPA 353.2 (calc.)	10238809	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270C SIM	10242407	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270C SIM	10242407	NELAP	LA
5500 - Acenaphthene	EPA 8270C SIM	10242407	NELAP	LA
5505 - Acenaphthylene	EPA 8270C SIM	10242407	NELAP	LA
5555 - Anthracene	EPA 8270C SIM	10242407	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270C SIM	10242407	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270C SIM	10242407	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270C SIM	10242407	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270C SIM	10242407	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270C SIM	10242407	NELAP	LA
5680 - Carbazole	EPA 8270C SIM	10242407	NELAP	LA
5855 - Chrysene	EPA 8270C SIM	10242407	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270C SIM	10242407	NELAP	LA
5905 - Dibenzofuran	EPA 8270C SIM	10242407	NELAP	LA
6265 - Fluoranthene	EPA 8270C SIM	10242407	NELAP	LA
6270 - Fluorene	EPA 8270C SIM	10242407	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270C SIM	10242407	NELAP	LA
5005 - Naphthalene	EPA 8270C SIM	10242407	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Method Name	Method Code	Agency	State
6615 - Phenanthrene	EPA 8270C SIM	10242407	NELAP LA
6665 - Pyrene	EPA 8270C SIM	10242407	NELAP LA
6380 - 1-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP LA
6385 - 2-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP LA
5500 - Acenaphthene	EPA 8270D SIM	10242509	NELAP LA
5505 - Acenaphthylene	EPA 8270D SIM	10242509	NELAP LA
5555 - Anthracene	EPA 8270D SIM	10242509	NELAP LA
5575 - Benz(a)anthracene	EPA 8270D SIM	10242509	NELAP LA
5580 - Benzo(a)pyrene	EPA 8270D SIM	10242509	NELAP LA
5585 - Benzo(b)fluoranthene	EPA 8270D SIM	10242509	NELAP LA
5590 - Benzo(g,h,i)perylene	EPA 8270D SIM	10242509	NELAP LA
5600 - Benzo(k)fluoranthene	EPA 8270D SIM	10242509	NELAP LA
5640 - Biphenyl (1,1'-Biphenyl)	EPA 8270D SIM	10242509	NELAP LA
6603 - C1-Chrysenes	EPA 8270D SIM	10242509	NELAP LA
5680 - Carbazole	EPA 8270D SIM	10242509	NELAP LA
5855 - Chrysene	EPA 8270D SIM	10242509	NELAP LA
5895 - Dibenzo(a,h)anthracene	EPA 8270D SIM	10242509	NELAP LA
5905 - Dibenzofuran	EPA 8270D SIM	10242509	NELAP LA
6265 - Fluoranthene	EPA 8270D SIM	10242509	NELAP LA
6270 - Fluorene	EPA 8270D SIM	10242509	NELAP LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D SIM	10242509	NELAP LA
5005 - Naphthalene	EPA 8270D SIM	10242509	NELAP LA
6615 - Phenanthrene	EPA 8270D SIM	10242509	NELAP LA
6665 - Pyrene	EPA 8270D SIM	10242509	NELAP LA
1510 - Amenable cyanide	EPA 9010C	10243002	NELAP LA
1645 - Total Cyanide	EPA 9010C	10243002	NELAP LA
1510 - Amenable cyanide	EPA 9012B	10243206	NELAP LA
1645 - Total Cyanide	EPA 9012B	10243206	NELAP LA
1900 - pH	EPA 9040C	10244403	NELAP LA
1710 - Dissolved organic carbon (DOC)	EPA 9060A	10244801	NELAP LA
2040 - Total Organic Carbon	EPA 9060A	10244801	NELAP LA
1970 - Residue-volatile	EPA 160.4	10256801	NELAP LA
1860 - Oil & Grease	EPA 1664B	10261617	NELAP LA
2050 - Total Petroleum Hydrocarbons (TPH)	EPA 1664B	10261617	NELAP LA
1935 - Total recoverable petroleum hydrocarbons (TRPH)	EPA 1664B	10261617	NELAP LA
1803 - n-Hexane Extractable Material (O&G)	EPA 1664B	10261617	NELAP LA
1095 - Mercury	EPA 245.2, Rev.4.1	10271406	NELAP LA
1429 - Microextraction of Organics in Water	EPA 3511	10279808	NELAP LA
1406 - Purge and trap for aqueous phase samples	EPA 5030C	10284603	NELAP LA
1450 - Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples	EPA 5035A	10284807	NELAP LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 624.1	10298121	NELAP LA
5160 - 1,1,1-Trichloroethane	EPA 624.1	10298121	NELAP LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 624.1	10298121	NELAP LA
5165 - 1,1,2-Trichloroethane	EPA 624.1	10298121	NELAP LA
4630 - 1,1-Dichloroethane	EPA 624.1	10298121	NELAP LA
4640 - 1,1-Dichloroethylene	EPA 624.1	10298121	NELAP LA
5150 - 1,2,3-Trichlorobenzene	EPA 624.1	10298121	NELAP LA
4570 - 1,2-Dibromo-3-chloropropane	EPA 624.1	10298121	NELAP LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Sample Name	Method	Lab Code	State	City
(DBCP)				
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 624.1	10298121	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 624.1	10298121	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 624.1	10298121	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 624.1	10298121	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 624.1	10298121	NELAP	LA
4500 - 2-Chloroethyl vinyl ether	EPA 624.1	10298121	NELAP	LA
4325 - Acrolein (Propenal)	EPA 624.1	10298121	NELAP	LA
4340 - Acrylonitrile	EPA 624.1	10298121	NELAP	LA
4375 - Benzene	EPA 624.1	10298121	NELAP	LA
4395 - Bromodichloromethane	EPA 624.1	10298121	NELAP	LA
4400 - Bromoform	EPA 624.1	10298121	NELAP	LA
4455 - Carbon tetrachloride	EPA 624.1	10298121	NELAP	LA
4475 - Chlorobenzene	EPA 624.1	10298121	NELAP	LA
4575 - Chlorodibromomethane (dibromochloromethane)	EPA 624.1	10298121	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 624.1	10298121	NELAP	LA
4505 - Chloroform	EPA 624.1	10298121	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 624.1	10298121	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 624.1	10298121	NELAP	LA
4765 - Ethylbenzene	EPA 624.1	10298121	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 624.1	10298121	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 624.1	10298121	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 624.1	10298121	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 624.1	10298121	NELAP	LA
5100 - Styrene	EPA 624.1	10298121	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 624.1	10298121	NELAP	LA
5140 - Toluene	EPA 624.1	10298121	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 624.1	10298121	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 624.1	10298121	NELAP	LA
5235 - Vinyl chloride	EPA 624.1	10298121	NELAP	LA
5260 - Xylene (total)	EPA 624.1	10298121	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 624.1	10298121	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 624.1	10298121	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 624.1	10298121	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA 624.1	10298121	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 625.1	10300024	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 625.1	10300024	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 625.1	10300024	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 625.1	10300024	NELAP	LA
5983 - 2,3-Dichlorophenol	EPA 625.1	10300024	NELAP	LA
6840 - 2,4,6-Trichlorophenol	EPA 625.1	10300024	NELAP	LA
6000 - 2,4-Dichlorophenol	EPA 625.1	10300024	NELAP	LA
6130 - 2,4-Dimethylphenol	EPA 625.1	10300024	NELAP	LA
6175 - 2,4-Dinitrophenol	EPA 625.1	10300024	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 625.1	10300024	NELAP	LA
5992 - 2,5-Dichlorophenol	EPA 625.1	10300024	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 625.1	10300024	NELAP	LA
5795 - 2-Chloronaphthalene	EPA 625.1	10300024	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Method Name	Method Code	Agency	State
5800 - 2-Chlorophenol	EPA 625.1	10300024	NELAP LA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 625.1	10300024	NELAP LA
6385 - 2-Methylnaphthalene	EPA 625.1	10300024	NELAP LA
6490 - 2-Nitrophenol	EPA 625.1	10300024	NELAP LA
5945 - 3,3'-Dichlorobenzidine	EPA 625.1	10300024	NELAP LA
5997 - 3,4-Dichlorophenol	EPA 625.1	10300024	NELAP LA
4742 - 3-Chlorophenol	EPA 625.1	10300024	NELAP LA
5660 - 4-Bromophenyl phenyl ether	EPA 625.1	10300024	NELAP LA
5700 - 4-Chloro-3-methylphenol	EPA 625.1	10300024	NELAP LA
5825 - 4-Chlorophenyl phenylether	EPA 625.1	10300024	NELAP LA
6500 - 4-Nitrophenol	EPA 625.1	10300024	NELAP LA
5500 - Acenaphthene	EPA 625.1	10300024	NELAP LA
5505 - Acenaphthylene	EPA 625.1	10300024	NELAP LA
5555 - Anthracene	EPA 625.1	10300024	NELAP LA
5575 - Benz(a)anthracene	EPA 625.1	10300024	NELAP LA
5595 - Benzidine	EPA 625.1	10300024	NELAP LA
5580 - Benzo(a)pyrene	EPA 625.1	10300024	NELAP LA
5585 - Benzo(b)fluoranthene	EPA 625.1	10300024	NELAP LA
5590 - Benzo(g,h,i)perylene	EPA 625.1	10300024	NELAP LA
5600 - Benzo(k)fluoranthene	EPA 625.1	10300024	NELAP LA
5780 - Bis(2-Chloroisopropyl) ether (2,2-oxybis(1-chloropropane))	EPA 625.1	10300024	NELAP LA
5670 - Butyl benzyl phthalate	EPA 625.1	10300024	NELAP LA
5855 - Chrysene	EPA 625.1	10300024	NELAP LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 625.1	10300024	NELAP LA
5925 - Di-n-butyl phthalate	EPA 625.1	10300024	NELAP LA
6200 - Di-n-octyl phthalate	EPA 625.1	10300024	NELAP LA
5895 - Dibenz(a,h)anthracene	EPA 625.1	10300024	NELAP LA
6070 - Diethyl phthalate	EPA 625.1	10300024	NELAP LA
6135 - Dimethyl phthalate	EPA 625.1	10300024	NELAP LA
6265 - Fluoranthene	EPA 625.1	10300024	NELAP LA
6270 - Fluorene	EPA 625.1	10300024	NELAP LA
6275 - Hexachlorobenzene	EPA 625.1	10300024	NELAP LA
4835 - Hexachlorobutadiene	EPA 625.1	10300024	NELAP LA
6285 - Hexachlorocyclopentadiene	EPA 625.1	10300024	NELAP LA
4840 - Hexachloroethane	EPA 625.1	10300024	NELAP LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 625.1	10300024	NELAP LA
6320 - Isophorone	EPA 625.1	10300024	NELAP LA
5005 - Naphthalene	EPA 625.1	10300024	NELAP LA
5015 - Nitrobenzene	EPA 625.1	10300024	NELAP LA
6605 - Pentachlorophenol	EPA 625.1	10300024	NELAP LA
6615 - Phenanthrene	EPA 625.1	10300024	NELAP LA
6625 - Phenol	EPA 625.1	10300024	NELAP LA
6665 - Pyrene	EPA 625.1	10300024	NELAP LA
5760 - bis(2-Chloroethoxy)methane	EPA 625.1	10300024	NELAP LA
5765 - bis(2-Chloroethyl) ether	EPA 625.1	10300024	NELAP LA
6545 - n-Nitrosodi-n-propylamine	EPA 625.1	10300024	NELAP LA
6530 - n-Nitrosodimethylamine	EPA 625.1	10300024	NELAP LA
6535 - n-Nitrosodiphenylamine	EPA 625.1	10300024	NELAP LA
9369 - Diesel range organics (DRO)	EPA 8015D	10305609	NELAP LA
4750 - Ethanol	EPA 8015D	10305609	NELAP LA
9408 - Gasoline range organics (GRO)	EPA 8015D	10305609	NELAP LA
4875 - Isobutyl alcohol (2-Methyl-1-	EPA 8015D	10305609	NELAP LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Method Name	Method Code	Sample	AI
propanol)			
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8015D	10305609	NELAP LA
4930 - Methanol	EPA 8015D	10305609	NELAP LA
6748 - Oil-Range Organics (ORO)	EPA 8015D	10305609	NELAP LA
2050 - Total Petroleum Hydrocarbons (TPH)	EPA 8015D	10305609	NELAP LA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8015D	10305609	NELAP LA
5055 - n-Propanol (1-Propanol)	EPA 8015D	10305609	NELAP LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260C	10307003	NELAP LA
5160 - 1,1,1-Trichloroethane	EPA 8260C	10307003	NELAP LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260C	10307003	NELAP LA
5165 - 1,1,2-Trichloroethane	EPA 8260C	10307003	NELAP LA
4630 - 1,1-Dichloroethane	EPA 8260C	10307003	NELAP LA
4640 - 1,1-Dichloroethylene	EPA 8260C	10307003	NELAP LA
4670 - 1,1-Dichloropropene	EPA 8260C	10307003	NELAP LA
5150 - 1,2,3-Trichlorobenzene	EPA 8260C	10307003	NELAP LA
5180 - 1,2,3-Trichloropropane	EPA 8260C	10307003	NELAP LA
5155 - 1,2,4-Trichlorobenzene	EPA 8260C	10307003	NELAP LA
5210 - 1,2,4-Trimethylbenzene	EPA 8260C	10307003	NELAP LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260C	10307003	NELAP LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260C	10307003	NELAP LA
4610 - 1,2-Dichlorobenzene	EPA 8260C	10307003	NELAP LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260C	10307003	NELAP LA
4655 - 1,2-Dichloropropane	EPA 8260C	10307003	NELAP LA
5215 - 1,3,5-Trimethylbenzene	EPA 8260C	10307003	NELAP LA
9318 - 1,3-Butadiene	EPA 8260C	10307003	NELAP LA
4615 - 1,3-Dichlorobenzene	EPA 8260C	10307003	NELAP LA
4660 - 1,3-Dichloropropane	EPA 8260C	10307003	NELAP LA
100276 - 1-Chloro-2-methylpropane	EPA 8260C	10307003	NELAP LA
5220 - 2,2,4-Trimethylpentane (Isooctane)	EPA 8260C	10307003	NELAP LA
4665 - 2,2-Dichloropropane	EPA 8260C	10307003	NELAP LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260C	10307003	NELAP LA
4500 - 2-Chloroethyl vinyl ether	EPA 8260C	10307003	NELAP LA
4535 - 2-Chlorotoluene	EPA 8260C	10307003	NELAP LA
4860 - 2-Hexanone	EPA 8260C	10307003	NELAP LA
4937 - 2-Methylbutadiene (Isoprene)	EPA 8260C	10307003	NELAP LA
4938 - 2-Methylbutane (Isopentane)	EPA 8260C	10307003	NELAP LA
4941 - 2-Methylpentane (Isohexane)	EPA 8260C	10307003	NELAP LA
4534 - 3-Methylpentane	EPA 8260C	10307003	NELAP LA
4540 - 4-Chlorotoluene	EPA 8260C	10307003	NELAP LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260C	10307003	NELAP LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260C	10307003	NELAP LA
100222 - 4-Methylstyrene	EPA 8260C	10307003	NELAP LA
4315 - Acetone	EPA 8260C	10307003	NELAP LA
4320 - Acetonitrile	EPA 8260C	10307003	NELAP LA
4325 - Acrolein (Propenal)	EPA 8260C	10307003	NELAP LA
4340 - Acrylonitrile	EPA 8260C	10307003	NELAP LA
4375 - Benzene	EPA 8260C	10307003	NELAP LA
100223 - Benzoyl chloride	EPA 8260C	10307003	NELAP LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Sample	Method	Method Code	Lab	City
5635 - Benzyl chloride	EPA 8260C	10307003	NELAP	LA
4385 - Bromobenzene	EPA 8260C	10307003	NELAP	LA
4390 - Bromochloromethane	EPA 8260C	10307003	NELAP	LA
4395 - Bromodichloromethane	EPA 8260C	10307003	NELAP	LA
4400 - Bromoform	EPA 8260C	10307003	NELAP	LA
4450 - Carbon disulfide	EPA 8260C	10307003	NELAP	LA
4455 - Carbon tetrachloride	EPA 8260C	10307003	NELAP	LA
4475 - Chlorobenzene	EPA 8260C	10307003	NELAP	LA
4575 - Chlorodibromomethane (dibromochloromethane)	EPA 8260C	10307003	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 8260C	10307003	NELAP	LA
4505 - Chloroform	EPA 8260C	10307003	NELAP	LA
4580 - Dibromochloropropane	EPA 8260C	10307003	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 8260C	10307003	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260C	10307003	NELAP	LA
4653 - Dicyclopentadiene	EPA 8260C	10307003	NELAP	LA
4745 - Epichlorohydrin (1-Chloro-2,3-epoxypropane)	EPA 8260C	10307003	NELAP	LA
4765 - Ethylbenzene	EPA 8260C	10307003	NELAP	LA
7645 - Furfural	EPA 8260C	10307003	NELAP	LA
4825 - Heptane	EPA 8260C	10307003	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8260C	10307003	NELAP	LA
100145 - Isopropyl Ether	EPA 8260C	10307003	NELAP	LA
4900 - Isopropylbenzene (Cumene)	EPA 8260C	10307003	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 8260C	10307003	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 8260C	10307003	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260C	10307003	NELAP	LA
4965 - Methylcyclohexane	EPA 8260C	10307003	NELAP	LA
4966 - Methylcyclopentane	EPA 8260C	10307003	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 8260C	10307003	NELAP	LA
5005 - Naphthalene	EPA 8260C	10307003	NELAP	LA
5028 - Pentane	EPA 8260C	10307003	NELAP	LA
5100 - Styrene	EPA 8260C	10307003	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260C	10307003	NELAP	LA
9574 - Tetrahydrothiophene	EPA 8260C	10307003	NELAP	LA
5140 - Toluene	EPA 8260C	10307003	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260C	10307003	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260C	10307003	NELAP	LA
5225 - Vinyl acetate	EPA 8260C	10307003	NELAP	LA
5235 - Vinyl chloride	EPA 8260C	10307003	NELAP	LA
5260 - Xylene (total)	EPA 8260C	10307003	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 8260C	10307003	NELAP	LA
5240 - m+p-xylene	EPA 8260C	10307003	NELAP	LA
4435 - n-Butylbenzene	EPA 8260C	10307003	NELAP	LA
4855 - n-Hexane	EPA 8260C	10307003	NELAP	LA
5055 - n-Propanol (1-Propanol)	EPA 8260C	10307003	NELAP	LA
100273 - n-Propylacetate	EPA 8260C	10307003	NELAP	LA
5090 - n-Propylbenzene	EPA 8260C	10307003	NELAP	LA
5250 - o-Xylene	EPA 8260C	10307003	NELAP	LA
4440 - sec-Butylbenzene	EPA 8260C	10307003	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Non Potable Water

Method Name	Method Code	Method Code	Type	AI
100275 - sec-Butylether	EPA 8260C	10307003	NELAP	LA
4445 - tert-Butylbenzene	EPA 8260C	10307003	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA 8260C	10307003	NELAP	LA
1725 - Total, Fixed, and Volatile Residue	SM 2540 G-2011, Rev.22nd	20005270	NELAP	LA
1605 - Color	SM 2120 B-2011	20039310	NELAP	LA
1500 - Acidity, as CaCO ₃	SM 2310 B-2011	20044615	NELAP	LA
1505 - Alkalinity as CaCO ₃	SM 2320 B-2011	20045618	NELAP	LA
1550 - Calcium hardness as CaCO ₃	SM 2340 B-2011	20046611	NELAP	LA
1755 - Total hardness as CaCO ₃	SM 2340 B-2011	20046611	NELAP	LA
1750 - Hardness	SM 2340 C-2011	20047614	NELAP	LA
2055 - Turbidity	SM 2130 B-2011	20048220	NELAP	LA
1610 - Conductivity	SM 2510 B-2011	20048617	NELAP	LA
1950 - Residue-total	SM 2540 B-2011	20049416	NELAP	LA
1955 - Residue-filterable (TDS)	SM 2540 C-2011	20050413	NELAP	LA
1960 - Residue-nonfilterable (TSS)	SM 2540 D-2011	20051212	NELAP	LA
2070 - Volatile suspended solids	SM 2540 E-2011	20051596	NELAP	LA
1965 - Residue-settleable	SM 2540 F-2011	20052215	NELAP	LA
1045 - Chromium VI	SM 3500-Cr B-2011	20066266	NELAP	LA
1070 - Iron	SM 3500-Fe B-2011	20069016	NELAP	LA
1073 - Iron-(II) (Ferrous Iron)	SM 3500-Fe B-2011	20069016	NELAP	LA
1730 - Fluoride	SM 4110 B-2011	20076919	NELAP	LA
1580 - Chlorine	SM 4500-Cl G-2011	20081623	NELAP	LA
1945 - Residual free chlorine	SM 4500-Cl G-2011	20081623	NELAP	LA
1940 - Total residual chlorine	SM 4500-Cl G-2011	20081623	NELAP	LA
1575 - Chloride	SM 4500-Cl ⁻ B-2011	20084611	NELAP	LA
1575 - Chloride	SM 4500-Cl ⁻ C-2011	20085216	NELAP	LA
1575 - Chloride	SM 4500-Cl ⁻ E-2011	20086811	NELAP	LA
1635 - Cyanide	SM 4500-CN ⁻ B-2011	20095265	NELAP	LA
1635 - Cyanide	SM 4500-CN ⁻ E-2011	20096428	NELAP	LA
1645 - Total Cyanide	SM 4500-CN ⁻ E-2011	20096428	NELAP	LA
1900 - pH	SM 4500-H ⁺ B-2011	20105220	NELAP	LA
1515 - Ammonia as N	SM 4500-NH ₃ B-2011	20106018	NELAP	LA
1515 - Ammonia as N	SM 4500-NH ₃ G-2011	20111415	NELAP	LA
1835 - Nitrite	SM 4500-NO ₃ ⁻ F-2011	20117628	NELAP	LA
1825 - Total Nitrate+Nitrite	SM 4500-NO ₃ ⁻ F-2011	20117628	NELAP	LA
1805 - Nitrate	SM 4500-NO ₃ ⁻ F-2011 minus EPA 353.2	20117651	NELAP	LA
1795 - Kjeldahl nitrogen - total	SM 4500-Norg D-2011	20120289	NELAP	LA
1880 - Oxygen, dissolved	SM 4500-O C-2011	20120836	NELAP	LA
1880 - Oxygen, dissolved	SM 4500-O G-2011	20121668	NELAP	LA
1910 - Total Phosphorus	SM 4500-P B 5-2011	20123368	NELAP	LA
1870 - Orthophosphate as P	SM 4500-P E-2011	20124225	NELAP	LA
1910 - Total Phosphorus	SM 4500-P F-2011	20125024	NELAP	LA
2005 - Sulfide	SM 4500-S ₂ ⁻ D-2011	20125864	NELAP	LA
2005 - Sulfide	SM 4500-S ₂ ⁻ F-2011	20126663	NELAP	LA
1990 - Silica as SiO ₂	SM 4500-SiO ₂ C-2011	20128614	NELAP	LA
1990 - Silica as SiO ₂	SM 4500-SiO ₂ F-2011	20129877	NELAP	LA
1995 - Silica-dissolved	SM 4500-SiO ₂ F-2011	20129877	NELAP	LA
2000 - Sulfate	SM 4500-SO ₄ ⁻ E-2011	20132461	NELAP	LA
1530 - Biochemical oxygen demand	SM 5210 B-2011	20135266	NELAP	LA
1555 - Carbonaceous BOD, CBOD	SM 5210 B-2011	20135266	NELAP	LA
1565 - Chemical oxygen demand	SM 5220 D-2011	20136816	NELAP	LA
1710 - Dissolved organic carbon (DOC)	SM 5310 B-2011	20137820	NELAP	LA
2040 - Total Organic Carbon	SM 5310 B-2011	20137820	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analyte	Method Name	Method Code	Lab	AI
1860 - Oil & Grease	SM 5520 B-2011	20141666	NELAP	LA
1935 - Total recoverable petroleum hydrocarbons (TRPH)	SM 5520 B-2011	20141666	NELAP	LA
1905 - Total Phenolics	SM 5530 B-2010	20143742	NELAP	LA
1905 - Total Phenolics	SM 5530 D-2010	20143775	NELAP	LA
2530 - Fecal coliforms	SM 9222 D-2006	20210019	NELAP	LA
9344 - Chlorophyll a	SM 10200 H, 21st ED	20300225	NELAP	LA
9344 - Chlorophyll a	SM 10200 H-2011	20300236	NELAP	LA
2000 - Sulfate	ASTM D516-11	30002245	NELAP	LA
1940 - Total residual chlorine	HACH 8167	60003818	NELAP	LA
9369 - Diesel range organics (DRO)	MADEP EPH, Rev.1.1	90017202	NELAP	LA
9408 - Gasoline range organics (GRO)	MADEP VPH, Rev.1.1	90017406	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Lab	AI
8641 - Percent Moisture	ASTM D 2974-87	3848	NELAP	LA
100861 - Percent Organic Matter	ASTM D 2974-87	3848	NELAP	LA
1525 - Percent ash	ASTM D 2974-87	3848	NELAP	LA
100711 - Fractional Organic Carbon (FOC)	LDEQ Method for Determination of FOC by Calculation	9366	NELAP	LA
1923 - Reactive Cyanide	EPA 7.3.3.2	10001204	NELAP	LA
1925 - Reactive sulfide	EPA 7.3.4.2	10001408	NELAP	LA
1810 - Nitrate as N	EPA 353.2, Rev.2	10067604	NELAP	LA
1820 - Nitrate-Nitrite	EPA 353.2, Rev.2	10067604	NELAP	LA
1840 - Nitrite as N	EPA 353.2, Rev.2	10067604	NELAP	LA
1825 - Total Nitrate+Nitrite	EPA 353.2, Rev.2	10067604	NELAP	LA
2005 - Sulfide	EPA 376.2	10074405	NELAP	LA
1905 - Total Phenolics	EPA 420.4, Rev.1	10080203	NELAP	LA
1780 - Ignitability	EPA 1010	10116606	NELAP	LA
1466 - Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311	10118806	NELAP	LA
1460 - Synthetic Precipitation Leaching Procedure	EPA 1312	10119003	NELAP	LA
1401 - Acid Digestion of Aqueous samples and Extracts for Total Metals for Analysis by GFAA	EPA 3020A	10134404	NELAP	LA
1403 - Acid Digestion of Oils for Metals Analysis or ICP Spectrometry	EPA 3031	10134608	NELAP	LA
1400 - Acid Digestion of Sediments, Sludges, and soils	EPA 3050B	10135601	NELAP	LA
1426 - Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils	EPA 3051A	10136002	NELAP	LA
100009 - Microwave Assisted Acid Digestion of Siliceous and Organically Based Matrices	EPA 3052	10136206	NELAP	LA
1402 - Alkaline Digestion for Hexavalent Chromium	EPA 3060A	10136604	NELAP	LA
1428 - Microwave Extraction	EPA 3546	10141205	NELAP	LA
1470 - Waste Dilution	EPA 3580A	10143007	NELAP	LA
1446 - Silica Gel Clean-up	EPA 3630C	10146802	NELAP	LA
2020 - Sulfuric acid/permanganate clean-up	EPA 3665A	10148808	NELAP	LA
1406 - Purge and trap for aqueous phase samples	EPA 5030B	10153409	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Material Name	EPA Method	Method Code	Agency	State
1450 - Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples	EPA 5035	10154004	NELAP	LA
1000 - Aluminum	EPA 6010B	10155609	NELAP	LA
1005 - Antimony	EPA 6010B	10155609	NELAP	LA
1010 - Arsenic	EPA 6010B	10155609	NELAP	LA
1015 - Barium	EPA 6010B	10155609	NELAP	LA
1020 - Beryllium	EPA 6010B	10155609	NELAP	LA
1025 - Boron	EPA 6010B	10155609	NELAP	LA
1030 - Cadmium	EPA 6010B	10155609	NELAP	LA
1035 - Calcium	EPA 6010B	10155609	NELAP	LA
1040 - Chromium	EPA 6010B	10155609	NELAP	LA
1050 - Cobalt	EPA 6010B	10155609	NELAP	LA
1055 - Copper	EPA 6010B	10155609	NELAP	LA
1070 - Iron	EPA 6010B	10155609	NELAP	LA
1075 - Lead	EPA 6010B	10155609	NELAP	LA
1080 - Lithium	EPA 6010B	10155609	NELAP	LA
1085 - Magnesium	EPA 6010B	10155609	NELAP	LA
1090 - Manganese	EPA 6010B	10155609	NELAP	LA
1100 - Molybdenum	EPA 6010B	10155609	NELAP	LA
1105 - Nickel	EPA 6010B	10155609	NELAP	LA
1125 - Potassium	EPA 6010B	10155609	NELAP	LA
1140 - Selenium	EPA 6010B	10155609	NELAP	LA
1150 - Silver	EPA 6010B	10155609	NELAP	LA
1155 - Sodium	EPA 6010B	10155609	NELAP	LA
1160 - Strontium	EPA 6010B	10155609	NELAP	LA
1165 - Thallium	EPA 6010B	10155609	NELAP	LA
1175 - Tin	EPA 6010B	10155609	NELAP	LA
1180 - Titanium	EPA 6010B	10155609	NELAP	LA
1185 - Vanadium	EPA 6010B	10155609	NELAP	LA
1190 - Zinc	EPA 6010B	10155609	NELAP	LA
1000 - Aluminum	EPA 6010C	10155803	NELAP	LA
1005 - Antimony	EPA 6010C	10155803	NELAP	LA
1010 - Arsenic	EPA 6010C	10155803	NELAP	LA
1015 - Barium	EPA 6010C	10155803	NELAP	LA
1020 - Beryllium	EPA 6010C	10155803	NELAP	LA
1025 - Boron	EPA 6010C	10155803	NELAP	LA
1030 - Cadmium	EPA 6010C	10155803	NELAP	LA
1035 - Calcium	EPA 6010C	10155803	NELAP	LA
1040 - Chromium	EPA 6010C	10155803	NELAP	LA
1050 - Cobalt	EPA 6010C	10155803	NELAP	LA
1055 - Copper	EPA 6010C	10155803	NELAP	LA
1070 - Iron	EPA 6010C	10155803	NELAP	LA
1075 - Lead	EPA 6010C	10155803	NELAP	LA
1080 - Lithium	EPA 6010C	10155803	NELAP	LA
1085 - Magnesium	EPA 6010C	10155803	NELAP	LA
1090 - Manganese	EPA 6010C	10155803	NELAP	LA
1100 - Molybdenum	EPA 6010C	10155803	NELAP	LA
1105 - Nickel	EPA 6010C	10155803	NELAP	LA
1125 - Potassium	EPA 6010C	10155803	NELAP	LA
1140 - Selenium	EPA 6010C	10155803	NELAP	LA
1150 - Silver	EPA 6010C	10155803	NELAP	LA
1155 - Sodium	EPA 6010C	10155803	NELAP	LA
1160 - Strontium	EPA 6010C	10155803	NELAP	LA
1165 - Thallium	EPA 6010C	10155803	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Material Name	Method Name	Method Code	Agency	Lab
1175 - Tin	EPA 6010C	10155803	NELAP	LA
1180 - Titanium	EPA 6010C	10155803	NELAP	LA
1185 - Vanadium	EPA 6010C	10155803	NELAP	LA
1190 - Zinc	EPA 6010C	10155803	NELAP	LA
1000 - Aluminum	EPA 6020A	10156408	NELAP	LA
1005 - Antimony	EPA 6020A	10156408	NELAP	LA
1010 - Arsenic	EPA 6020A	10156408	NELAP	LA
1015 - Barium	EPA 6020A	10156408	NELAP	LA
1020 - Beryllium	EPA 6020A	10156408	NELAP	LA
1025 - Boron	EPA 6020A	10156408	NELAP	LA
1030 - Cadmium	EPA 6020A	10156408	NELAP	LA
1035 - Calcium	EPA 6020A	10156408	NELAP	LA
1040 - Chromium	EPA 6020A	10156408	NELAP	LA
1050 - Cobalt	EPA 6020A	10156408	NELAP	LA
1055 - Copper	EPA 6020A	10156408	NELAP	LA
1070 - Iron	EPA 6020A	10156408	NELAP	LA
1075 - Lead	EPA 6020A	10156408	NELAP	LA
1085 - Magnesium	EPA 6020A	10156408	NELAP	LA
1090 - Manganese	EPA 6020A	10156408	NELAP	LA
1095 - Mercury	EPA 6020A	10156408	NELAP	LA
1100 - Molybdenum	EPA 6020A	10156408	NELAP	LA
1105 - Nickel	EPA 6020A	10156408	NELAP	LA
1125 - Potassium	EPA 6020A	10156408	NELAP	LA
1140 - Selenium	EPA 6020A	10156408	NELAP	LA
1150 - Silver	EPA 6020A	10156408	NELAP	LA
1155 - Sodium	EPA 6020A	10156408	NELAP	LA
1160 - Strontium	EPA 6020A	10156408	NELAP	LA
1165 - Thallium	EPA 6020A	10156408	NELAP	LA
1180 - Titanium	EPA 6020A	10156408	NELAP	LA
1185 - Vanadium	EPA 6020A	10156408	NELAP	LA
1190 - Zinc	EPA 6020A	10156408	NELAP	LA
1045 - Chromium VI	EPA 7196A	10162400	NELAP	LA
1095 - Mercury	EPA 7471A	10166208	NELAP	LA
1095 - Mercury	EPA 7471B	10166402	NELAP	LA
1095 - Mercury	EPA 7473	10166800	NELAP	LA
4350 - Allyl alcohol	EPA 8015C	10173805	NELAP	LA
9369 - Diesel range organics (DRO)	EPA 8015C	10173805	NELAP	LA
9408 - Gasoline range organics (GRO)	EPA 8015C	10173805	NELAP	LA
4875 - Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8015C	10173805	NELAP	LA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8015C	10173805	NELAP	LA
4930 - Methanol	EPA 8015C	10173805	NELAP	LA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8015C	10173805	NELAP	LA
5055 - n-Propanol (1-Propanol)	EPA 8015C	10173805	NELAP	LA
4420 - tert-Butyl alcohol	EPA 8015C	10173805	NELAP	LA
6748 - Oil-Range Organics (ORO)	EPA 8015C, Rev.3	10173816	NELAP	LA
4375 - Benzene	EPA 8021A	10174604	NELAP	LA
4765 - Ethylbenzene	EPA 8021A	10174604	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021A	10174604	NELAP	LA
5140 - Toluene	EPA 8021A	10174604	NELAP	LA
5260 - Xylene (total)	EPA 8021A	10174604	NELAP	LA
5250 - o-Xylene	EPA 8021A	10174604	NELAP	LA
4375 - Benzene	EPA 8021B	10174808	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Material Name	Method Name	Method No. / Code	Agency	State
4765 - Ethylbenzene	EPA 8021B	10174808	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021B	10174808	NELAP	LA
5140 - Toluene	EPA 8021B	10174808	NELAP	LA
5260 - Xylene (total)	EPA 8021B	10174808	NELAP	LA
5250 - o-Xylene	EPA 8021B	10174808	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082	10179007	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082	10179007	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082	10179007	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082	10179007	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082	10179007	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082	10179007	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082	10179007	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082A	10179201	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082A	10179201	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082A	10179201	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082A	10179201	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082A	10179201	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082A	10179201	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082A	10179201	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA 8260B	10184802	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	LA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260B	10184802	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA 8260B	10184802	NELAP	LA
4630 - 1,1-Dichloroethane	EPA 8260B	10184802	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4670 - 1,1-Dichloropropene	EPA 8260B	10184802	NELAP	LA
5150 - 1,2,3-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA 8260B	10184802	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA 8260B	10184802	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260B	10184802	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260B	10184802	NELAP	LA
4697 - 1,2-Dichloro-1,1,2-trifluoroethane	EPA 8260B	10184802	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260B	10184802	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 8260B	10184802	NELAP	LA
6800 - 1,3,5-Trichlorobenzene	EPA 8260B	10184802	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA 8260B	10184802	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4660 - 1,3-Dichloropropane	EPA 8260B	10184802	NELAP	LA
4675 - 1,3-Dichloropropene	EPA 8260B	10184802	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8260B	10184802	NELAP	LA
4735 - 1,4-Dioxane (1,4-Diethyleneoxide)	EPA 8260B	10184802	NELAP	LA
100276 - 1-Chloro-2-methylpropane	EPA 8260B	10184802	NELAP	LA
4480 - 1-Chlorobutane	EPA 8260B	10184802	NELAP	LA
4510 - 1-Chlorohexane	EPA 8260B	10184802	NELAP	LA
5220 - 2,2,4-Trimethylpentane (Isooctane)	EPA 8260B	10184802	NELAP	LA
4665 - 2,2-Dichloropropane	EPA 8260B	10184802	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260B	10184802	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Chemical Name	Method Name	Method Code	Test	Unit
4490 - 2-Chloroethanol	EPA 8260B	10184802	NELAP	LA
4500 - 2-Chloroethyl vinyl ether	EPA 8260B	10184802	NELAP	LA
4535 - 2-Chlorotoluene	EPA 8260B	10184802	NELAP	LA
4860 - 2-Hexanone	EPA 8260B	10184802	NELAP	LA
4937 - 2-Methylbutadiene (Isoprene)	EPA 8260B	10184802	NELAP	LA
4938 - 2-Methylbutane (Isopentane)	EPA 8260B	10184802	NELAP	LA
4941 - 2-Methylpentane (Isohexane)	EPA 8260B	10184802	NELAP	LA
5020 - 2-Nitropropane	EPA 8260B	10184802	NELAP	LA
5045 - 2-Pentanone	EPA 8260B	10184802	NELAP	LA
4534 - 3-Methylpentane	EPA 8260B	10184802	NELAP	LA
4540 - 4-Chlorotoluene	EPA 8260B	10184802	NELAP	LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260B	10184802	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260B	10184802	NELAP	LA
100222 - 4-Methylstyrene	EPA 8260B	10184802	NELAP	LA
4315 - Acetone	EPA 8260B	10184802	NELAP	LA
4320 - Acetonitrile	EPA 8260B	10184802	NELAP	LA
4325 - Acrolein (Propenal)	EPA 8260B	10184802	NELAP	LA
4340 - Acrylonitrile	EPA 8260B	10184802	NELAP	LA
4350 - Allyl alcohol	EPA 8260B	10184802	NELAP	LA
4355 - Allyl chloride (3-Chloropropene)	EPA 8260B	10184802	NELAP	LA
4375 - Benzene	EPA 8260B	10184802	NELAP	LA
100223 - Benzoyl chloride	EPA 8260B	10184802	NELAP	LA
5635 - Benzyl chloride	EPA 8260B	10184802	NELAP	LA
4385 - Bromobenzene	EPA 8260B	10184802	NELAP	LA
4390 - Bromochloromethane	EPA 8260B	10184802	NELAP	LA
4395 - Bromodichloromethane	EPA 8260B	10184802	NELAP	LA
4400 - Bromoform	EPA 8260B	10184802	NELAP	LA
4450 - Carbon disulfide	EPA 8260B	10184802	NELAP	LA
4455 - Carbon tetrachloride	EPA 8260B	10184802	NELAP	LA
4475 - Chlorobenzene	EPA 8260B	10184802	NELAP	LA
4575 - Chlorodibromomethane (dibromochloromethane)	EPA 8260B	10184802	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 8260B	10184802	NELAP	LA
4505 - Chloroform	EPA 8260B	10184802	NELAP	LA
4525 - Chloroprene (2-Chloro-1,3-butadiene)	EPA 8260B	10184802	NELAP	LA
4555 - Cyclohexane	EPA 8260B	10184802	NELAP	LA
4560 - Cyclohexanone	EPA 8260B	10184802	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260B	10184802	NELAP	LA
4580 - Dibromochloropropane	EPA 8260B	10184802	NELAP	LA
4590 - Dibromofluoromethane	EPA 8260B	10184802	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 8260B	10184802	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260B	10184802	NELAP	LA
4653 - Dicyclopentadiene	EPA 8260B	10184802	NELAP	LA
4725 - Diethyl ether	EPA 8260B	10184802	NELAP	LA
4745 - Epichlorohydrin (1-Chloro-2,3-epoxypropane)	EPA 8260B	10184802	NELAP	LA
4750 - Ethanol	EPA 8260B	10184802	NELAP	LA
4755 - Ethyl acetate	EPA 8260B	10184802	NELAP	LA
4810 - Ethyl methacrylate	EPA 8260B	10184802	NELAP	LA
4765 - Ethylbenzene	EPA 8260B	10184802	NELAP	LA
7645 - Furfural	EPA 8260B	10184802	NELAP	LA
4825 - Heptane	EPA 8260B	10184802	NELAP	LA

Solid Chemical Materials

Material Name	Material Code	Material Code	Material Code	Material Code
4835 - Hexachlorobutadiene	EPA 8260B	10184802	NELAP	LA
4870 - Iodomethane (Methyl iodide)	EPA 8260B	10184802	NELAP	LA
4875 - Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260B	10184802	NELAP	LA
100145 - Isopropyl Ether	EPA 8260B	10184802	NELAP	LA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8260B	10184802	NELAP	LA
4900 - Isopropylbenzene (Cumene)	EPA 8260B	10184802	NELAP	LA
4925 - Methacrylonitrile	EPA 8260B	10184802	NELAP	LA
4940 - Methyl acetate	EPA 8260B	10184802	NELAP	LA
4945 - Methyl acrylate	EPA 8260B	10184802	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 8260B	10184802	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 8260B	10184802	NELAP	LA
4990 - Methyl methacrylate	EPA 8260B	10184802	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260B	10184802	NELAP	LA
4966 - Methylcyclopentane	EPA 8260B	10184802	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 8260B	10184802	NELAP	LA
5005 - Naphthalene	EPA 8260B	10184802	NELAP	LA
5015 - Nitrobenzene	EPA 8260B	10184802	NELAP	LA
5035 - Pentachloroethane	EPA 8260B	10184802	NELAP	LA
5040 - Pentafluorobenzene	EPA 8260B	10184802	NELAP	LA
5028 - Pentane	EPA 8260B	10184802	NELAP	LA
5080 - Propionitrile (Ethyl cyanide)	EPA 8260B	10184802	NELAP	LA
5100 - Styrene	EPA 8260B	10184802	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260B	10184802	NELAP	LA
5120 - Tetrahydrofuran (THF)	EPA 8260B	10184802	NELAP	LA
9574 - Tetrahydrothiophene	EPA 8260B	10184802	NELAP	LA
5140 - Toluene	EPA 8260B	10184802	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260B	10184802	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260B	10184802	NELAP	LA
5225 - Vinyl acetate	EPA 8260B	10184802	NELAP	LA
5235 - Vinyl chloride	EPA 8260B	10184802	NELAP	LA
5260 - Xylene (total)	EPA 8260B	10184802	NELAP	LA
4705 - cis & trans-1,2-Dichloroethene	EPA 8260B	10184802	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 8260B	10184802	NELAP	LA
4600 - cis-1,4-Dichloro-2-butene	EPA 8260B	10184802	NELAP	LA
5240 - m+p-xylene	EPA 8260B	10184802	NELAP	LA
5245 - m-Xylene	EPA 8260B	10184802	NELAP	LA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8260B	10184802	NELAP	LA
4435 - n-Butylbenzene	EPA 8260B	10184802	NELAP	LA
4855 - n-Hexane	EPA 8260B	10184802	NELAP	LA
5055 - n-Propanol (1-Propanol)	EPA 8260B	10184802	NELAP	LA
100273 - n-Propylacetate	EPA 8260B	10184802	NELAP	LA
5090 - n-Propylbenzene	EPA 8260B	10184802	NELAP	LA
5250 - o-Xylene	EPA 8260B	10184802	NELAP	LA
5255 - p-Xylene	EPA 8260B	10184802	NELAP	LA
4440 - sec-Butylbenzene	EPA 8260B	10184802	NELAP	LA
100275 - sec-Butylether	EPA 8260B	10184802	NELAP	LA
4420 - tert-Butyl alcohol	EPA 8260B	10184802	NELAP	LA
4445 - tert-Butylbenzene	EPA 8260B	10184802	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Solid Chemical Materials

Material Name	EPA Method	Material Name	EPA Method	Agency	State
4700 - trans-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	LA	
4685 - trans-1,3-Dichloropropylene	EPA 8260B	10184802	NELAP	LA	
4605 - trans-1,4-Dichloro-2-butene	EPA 8260B	10184802	NELAP	LA	
9335 - 1-Methyl-2-pyrrolidinone (NMP)	EPA 8270C	10185805	NELAP	LA	
6705 - 1,2,3,4-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	LA	
6710 - 1,2,3,5-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	LA	
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	LA	
5155 - 1,2,4-Trichlorobenzene	EPA 8270C	10185805	NELAP	LA	
4610 - 1,2-Dichlorobenzene	EPA 8270C	10185805	NELAP	LA	
6220 - 1,2-Diphenylhydrazine	EPA 8270C	10185805	NELAP	LA	
4615 - 1,3-Dichlorobenzene	EPA 8270C	10185805	NELAP	LA	
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270C	10185805	NELAP	LA	
4620 - 1,4-Dichlorobenzene	EPA 8270C	10185805	NELAP	LA	
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270C	10185805	NELAP	LA	
6835 - 2,4,5-Trichlorophenol	EPA 8270C	10185805	NELAP	LA	
6840 - 2,4,6-Trichlorophenol	EPA 8270C	10185805	NELAP	LA	
6000 - 2,4-Dichlorophenol	EPA 8270C	10185805	NELAP	LA	
6130 - 2,4-Dimethylphenol	EPA 8270C	10185805	NELAP	LA	
6175 - 2,4-Dinitrophenol	EPA 8270C	10185805	NELAP	LA	
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270C	10185805	NELAP	LA	
6005 - 2,6-Dichlorophenol	EPA 8270C	10185805	NELAP	LA	
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270C	10185805	NELAP	LA	
5795 - 2-Chloronaphthalene	EPA 8270C	10185805	NELAP	LA	
5800 - 2-Chlorophenol	EPA 8270C	10185805	NELAP	LA	
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270C	10185805	NELAP	LA	
5145 - 2-Methylaniline (o-Toluidine)	EPA 8270C	10185805	NELAP	LA	
6385 - 2-Methylnaphthalene	EPA 8270C	10185805	NELAP	LA	
6400 - 2-Methylphenol (o-Cresol)	EPA 8270C	10185805	NELAP	LA	
6460 - 2-Nitroaniline	EPA 8270C	10185805	NELAP	LA	
6490 - 2-Nitrophenol	EPA 8270C	10185805	NELAP	LA	
6690 - 2-Sec-butyl-4,6-dinitrophenol (DNBP, Dinoseb)	EPA 8270C	10185805	NELAP	LA	
5945 - 3,3'-Dichlorobenzidine	EPA 8270C	10185805	NELAP	LA	
6405 - 3-Methylphenol (m-Cresol)	EPA 8270C	10185805	NELAP	LA	
6465 - 3-Nitroaniline	EPA 8270C	10185805	NELAP	LA	
5540 - 4-Aminobiphenyl	EPA 8270C	10185805	NELAP	LA	
5660 - 4-Bromophenyl phenyl ether	EPA 8270C	10185805	NELAP	LA	
5700 - 4-Chloro-3-methylphenol	EPA 8270C	10185805	NELAP	LA	
5745 - 4-Chloroaniline	EPA 8270C	10185805	NELAP	LA	
5805 - 4-Chlorophenol	EPA 8270C	10185805	NELAP	LA	
5825 - 4-Chlorophenyl phenylether	EPA 8270C	10185805	NELAP	LA	
6410 - 4-Methylphenol (p-Cresol)	EPA 8270C	10185805	NELAP	LA	
6470 - 4-Nitroaniline	EPA 8270C	10185805	NELAP	LA	
6500 - 4-Nitrophenol	EPA 8270C	10185805	NELAP	LA	
6570 - 5-Nitro-o-toluidine	EPA 8270C	10185805	NELAP	LA	
6115 - 7,12-Dimethylbenz(a) anthracene	EPA 8270C	10185805	NELAP	LA	
5500 - Acenaphthene	EPA 8270C	10185805	NELAP	LA	
5505 - Acenaphthylene	EPA 8270C	10185805	NELAP	LA	
5510 - Acetophenone	EPA 8270C	10185805	NELAP	LA	
5545 - Aniline	EPA 8270C	10185805	NELAP	LA	
5555 - Anthracene	EPA 8270C	10185805	NELAP	LA	
5575 - Benz(a)anthracene	EPA 8270C	10185805	NELAP	LA	
5595 - Benzidine	EPA 8270C	10185805	NELAP	LA	
5580 - Benzo(a)pyrene	EPA 8270C	10185805	NELAP	LA	

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Material Name	Material Code	Material Group	Agency	AI#
5585 - Benzo(b)fluoranthene	EPA 8270C	10185805	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270C	10185805	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270C	10185805	NELAP	LA
5610 - Benzoic acid	EPA 8270C	10185805	NELAP	LA
5630 - Benzyl alcohol	EPA 8270C	10185805	NELAP	LA
5640 - Biphenyl (1,1'-Biphenyl)	EPA 8270C	10185805	NELAP	LA
5780 - Bis(2-Chloroisopropyl) ether (2,2-oxybis(1-chloropropane))	EPA 8270C	10185805	NELAP	LA
5670 - Butyl benzyl phthalate	EPA 8270C	10185805	NELAP	LA
5680 - Carbazole	EPA 8270C	10185805	NELAP	LA
5855 - Chrysene	EPA 8270C	10185805	NELAP	LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270C	10185805	NELAP	LA
5925 - Di-n-butyl phthalate	EPA 8270C	10185805	NELAP	LA
6200 - Di-n-octyl phthalate	EPA 8270C	10185805	NELAP	LA
9354 - Dibenz(a, h) acridine	EPA 8270C	10185805	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270C	10185805	NELAP	LA
5905 - Dibenzofuran	EPA 8270C	10185805	NELAP	LA
6070 - Diethyl phthalate	EPA 8270C	10185805	NELAP	LA
6135 - Dimethyl phthalate	EPA 8270C	10185805	NELAP	LA
6210 - Diphenyl ether (Diphenyl Oxide)	EPA 8270C	10185805	NELAP	LA
6205 - Diphenylamine	EPA 8270C	10185805	NELAP	LA
6265 - Fluoranthene	EPA 8270C	10185805	NELAP	LA
6270 - Fluorene	EPA 8270C	10185805	NELAP	LA
6275 - Hexachlorobenzene	EPA 8270C	10185805	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8270C	10185805	NELAP	LA
6285 - Hexachlorocyclopentadiene	EPA 8270C	10185805	NELAP	LA
4840 - Hexachloroethane	EPA 8270C	10185805	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270C	10185805	NELAP	LA
6320 - Isophorone	EPA 8270C	10185805	NELAP	LA
5005 - Naphthalene	EPA 8270C	10185805	NELAP	LA
5015 - Nitrobenzene	EPA 8270C	10185805	NELAP	LA
6605 - Pentachlorophenol	EPA 8270C	10185805	NELAP	LA
6615 - Phenanthrene	EPA 8270C	10185805	NELAP	LA
6625 - Phenol	EPA 8270C	10185805	NELAP	LA
6665 - Pyrene	EPA 8270C	10185805	NELAP	LA
5095 - Pyridine	EPA 8270C	10185805	NELAP	LA
100199 - Sulfolane	EPA 8270C	10185805	NELAP	LA
6750 - Thiophenol (Benzenethiol)	EPA 8270C	10185805	NELAP	LA
4357 - alpha-Methylstyrene	EPA 8270C	10185805	NELAP	LA
5760 - bis(2-Chloroethoxy)methane	EPA 8270C	10185805	NELAP	LA
5765 - bis(2-Chloroethyl) ether	EPA 8270C	10185805	NELAP	LA
6545 - n-Nitrosodi-n-propylamine	EPA 8270C	10185805	NELAP	LA
6530 - n-Nitrosodimethylamine	EPA 8270C	10185805	NELAP	LA
6535 - n-Nitrosodiphenylamine	EPA 8270C	10185805	NELAP	LA
9335 - 1-Methyl-2-pyrrolidinone (NMP)	EPA 8270D	10186002	NELAP	LA
6705 - 1,2,3,4-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
6710 - 1,2,3,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8270D	10186002	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6220 - 1,2-Diphenylhydrazine	EPA 8270D	10186002	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D	10186002	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8270D	10186002	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Material Name	Material Number	Material Code	Material Type	Material Location
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	LA
6740 - 2,3,5,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	LA
6835 - 2,4,5-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
6840 - 2,4,6-Trichlorophenol	EPA 8270D	10186002	NELAP	LA
6000 - 2,4-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6130 - 2,4-Dimethylphenol	EPA 8270D	10186002	NELAP	LA
6175 - 2,4-Dinitrophenol	EPA 8270D	10186002	NELAP	LA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	10186002	NELAP	LA
6005 - 2,6-Dichlorophenol	EPA 8270D	10186002	NELAP	LA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	10186002	NELAP	LA
5795 - 2-Chloronaphthalene	EPA 8270D	10186002	NELAP	LA
5800 - 2-Chlorophenol	EPA 8270D	10186002	NELAP	LA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270D	10186002	NELAP	LA
5145 - 2-Methylaniline (o-Toluidine)	EPA 8270D	10186002	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270D	10186002	NELAP	LA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270D	10186002	NELAP	LA
6460 - 2-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6490 - 2-Nitrophenol	EPA 8270D	10186002	NELAP	LA
6690 - 2-Sec-butyl-4,6-dinitrophenol (DNBP, Dinoseb)	EPA 8270D	10186002	NELAP	LA
5945 - 3,3'-Dichlorobenzidine	EPA 8270D	10186002	NELAP	LA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270D	10186002	NELAP	LA
6465 - 3-Nitroaniline	EPA 8270D	10186002	NELAP	LA
5540 - 4-Aminobiphenyl	EPA 8270D	10186002	NELAP	LA
5660 - 4-Bromophenyl phenyl ether	EPA 8270D	10186002	NELAP	LA
5700 - 4-Chloro-3-methylphenol	EPA 8270D	10186002	NELAP	LA
5745 - 4-Chloroaniline	EPA 8270D	10186002	NELAP	LA
5805 - 4-Chlorophenol	EPA 8270D	10186002	NELAP	LA
5825 - 4-Chlorophenyl phenylether	EPA 8270D	10186002	NELAP	LA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270D	10186002	NELAP	LA
6470 - 4-Nitroaniline	EPA 8270D	10186002	NELAP	LA
6500 - 4-Nitrophenol	EPA 8270D	10186002	NELAP	LA
6570 - 5-Nitro-o-toluidine	EPA 8270D	10186002	NELAP	LA
6115 - 7,12-Dimethylbenz(a) anthracene	EPA 8270D	10186002	NELAP	LA
5500 - Acenaphthene	EPA 8270D	10186002	NELAP	LA
5505 - Acenaphthylene	EPA 8270D	10186002	NELAP	LA
5510 - Acetophenone	EPA 8270D	10186002	NELAP	LA
5545 - Aniline	EPA 8270D	10186002	NELAP	LA
5555 - Anthracene	EPA 8270D	10186002	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D	10186002	NELAP	LA
5595 - Benzidine	EPA 8270D	10186002	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270D	10186002	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D	10186002	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D	10186002	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D	10186002	NELAP	LA
5610 - Benzoic acid	EPA 8270D	10186002	NELAP	LA
5630 - Benzyl alcohol	EPA 8270D	10186002	NELAP	LA
5640 - Biphenyl (1,1'-Biphenyl)	EPA 8270D	10186002	NELAP	LA
5780 - Bis(2-Chloroisopropyl) ether (2,2-oxybis(1-chloropropane))	EPA 8270D	10186002	NELAP	LA
5670 - Butyl benzyl phthalate	EPA 8270D	10186002	NELAP	LA
5680 - Carbazole	EPA 8270D	10186002	NELAP	LA
5855 - Chrysene	EPA 8270D	10186002	NELAP	LA
6065 - Di(2-ethylhexyl) phthalate (bis(2-	EPA 8270D	10186002	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Ethylhexyl)phthalate, DEHP)				
5925 - Di-n-butyl phthalate	EPA 8270D	10186002	NELAP	LA
6200 - Di-n-octyl phthalate	EPA 8270D	10186002	NELAP	LA
9354 - Dibenz(a, h) acridine	EPA 8270D	10186002	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270D	10186002	NELAP	LA
5905 - Dibenzofuran	EPA 8270D	10186002	NELAP	LA
6070 - Diethyl phthalate	EPA 8270D	10186002	NELAP	LA
6135 - Dimethyl phthalate	EPA 8270D	10186002	NELAP	LA
6210 - Diphenyl ether (Diphenyl Oxide)	EPA 8270D	10186002	NELAP	LA
6205 - Diphenylamine	EPA 8270D	10186002	NELAP	LA
6265 - Fluoranthene	EPA 8270D	10186002	NELAP	LA
6270 - Fluorene	EPA 8270D	10186002	NELAP	LA
6275 - Hexachlorobenzene	EPA 8270D	10186002	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8270D	10186002	NELAP	LA
6285 - Hexachlorocyclopentadiene	EPA 8270D	10186002	NELAP	LA
4840 - Hexachloroethane	EPA 8270D	10186002	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D	10186002	NELAP	LA
6320 - Isophorone	EPA 8270D	10186002	NELAP	LA
5005 - Naphthalene	EPA 8270D	10186002	NELAP	LA
5015 - Nitrobenzene	EPA 8270D	10186002	NELAP	LA
6605 - Pentachlorophenol	EPA 8270D	10186002	NELAP	LA
6615 - Phenanthrene	EPA 8270D	10186002	NELAP	LA
6625 - Phenol	EPA 8270D	10186002	NELAP	LA
6665 - Pyrene	EPA 8270D	10186002	NELAP	LA
5095 - Pyridine	EPA 8270D	10186002	NELAP	LA
100199 - Sulfolane	EPA 8270D	10186002	NELAP	LA
6750 - Thiophenol (Benzenethiol)	EPA 8270D	10186002	NELAP	LA
4357 - alpha-Methylstyrene	EPA 8270D	10186002	NELAP	LA
5760 - bis(2-Chloroethoxy)methane	EPA 8270D	10186002	NELAP	LA
5765 - bis(2-Chloroethyl) ether	EPA 8270D	10186002	NELAP	LA
6545 - n-Nitrosodi-n-propylamine	EPA 8270D	10186002	NELAP	LA
6530 - n-Nitrosodimethylamine	EPA 8270D	10186002	NELAP	LA
6535 - n-Nitrosodiphenylamine	EPA 8270D	10186002	NELAP	LA
1510 - Amenable cyanide	EPA 9010B	10193007	NELAP	LA
1635 - Cyanide	EPA 9010B	10193007	NELAP	LA
1635 - Cyanide	EPA 9012A	10193405	NELAP	LA
1645 - Total Cyanide	EPA 9012A	10193405	NELAP	LA
1635 - Cyanide	EPA 9014	10193803	NELAP	LA
1645 - Total Cyanide	EPA 9014	10193803	NELAP	LA
2005 - Sulfide	EPA 9030	10195207	NELAP	LA
2005 - Sulfide	EPA 9030A	10195401	NELAP	LA
2010 - Total Sulfides	EPA 9030A	10195401	NELAP	LA
1925 - Reactive sulfide	EPA 9034	10196006	NELAP	LA
2005 - Sulfide	EPA 9034	10196006	NELAP	LA
2010 - Total Sulfides	EPA 9034	10196006	NELAP	LA
2000 - Sulfate	EPA 9036	10196404	NELAP	LA
2000 - Sulfate	EPA 9038	10196608	NELAP	LA
1900 - pH	EPA 9045C	10198400	NELAP	LA
1610 - Conductivity	EPA 9050	10198604	NELAP	LA
1610 - Conductivity	EPA 9050A	10198808	NELAP	LA
2040 - Total Organic Carbon	EPA 9060	10200201	NELAP	LA
1905 - Total Phenolics	EPA 9065	10200405	NELAP	LA
1860 - Oil & Grease	EPA 9071B	10201602	NELAP	LA
2050 - Total Petroleum Hydrocarbons (TPH)	EPA 9071B	10201602	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Analysis	Method Name	Method Code	State	Agency
1860 - Oil & Grease	EPA 9071B, Rev.2	10201806	NELAP	LA
2050 - Total Petroleum Hydrocarbons (TPH)	EPA 9071B, Rev.2	10201806	NELAP	LA
1935 - Total recoverable petroleum hydrocarbons (TRPH)	EPA 9071B, Rev.2	10201806	NELAP	LA
1745 - Free liquid	EPA 9095A	10204203	NELAP	LA
1575 - Chloride	EPA 9251	10207406	NELAP	LA
1780 - Ignitability	EPA 1010A	10234807	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 600/4-81-045	10241802	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 600/4-81-045	10241802	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 600/4-81-045	10241802	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 600/4-81-045	10241802	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 600/4-81-045	10241802	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 600/4-81-045	10241802	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 600/4-81-045	10241802	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270C SIM	10242407	NELAP	LA
5500 - Acenaphthene	EPA 8270C SIM	10242407	NELAP	LA
5505 - Acenaphthylene	EPA 8270C SIM	10242407	NELAP	LA
5555 - Anthracene	EPA 8270C SIM	10242407	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270C SIM	10242407	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270C SIM	10242407	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270C SIM	10242407	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270C SIM	10242407	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270C SIM	10242407	NELAP	LA
5855 - Chrysene	EPA 8270C SIM	10242407	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270C SIM	10242407	NELAP	LA
6265 - Fluoranthene	EPA 8270C SIM	10242407	NELAP	LA
6270 - Fluorene	EPA 8270C SIM	10242407	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270C SIM	10242407	NELAP	LA
5005 - Naphthalene	EPA 8270C SIM	10242407	NELAP	LA
6615 - Phenanthrene	EPA 8270C SIM	10242407	NELAP	LA
6665 - Pyrene	EPA 8270C SIM	10242407	NELAP	LA
6380 - 1-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP	LA
6385 - 2-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP	LA
5500 - Acenaphthene	EPA 8270D SIM	10242509	NELAP	LA
5505 - Acenaphthylene	EPA 8270D SIM	10242509	NELAP	LA
5555 - Anthracene	EPA 8270D SIM	10242509	NELAP	LA
5575 - Benz(a)anthracene	EPA 8270D SIM	10242509	NELAP	LA
5580 - Benzo(a)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5585 - Benzo(b)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5590 - Benzo(g,h,i)perylene	EPA 8270D SIM	10242509	NELAP	LA
5600 - Benzo(k)fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
5640 - Biphenyl (1,1'-Biphenyl)	EPA 8270D SIM	10242509	NELAP	LA
6603 - Cl-Chrysenes	EPA 8270D SIM	10242509	NELAP	LA
5680 - Carbazole	EPA 8270D SIM	10242509	NELAP	LA
5855 - Chrysene	EPA 8270D SIM	10242509	NELAP	LA
5895 - Dibenz(a,h)anthracene	EPA 8270D SIM	10242509	NELAP	LA
5905 - Dibenzofuran	EPA 8270D SIM	10242509	NELAP	LA
6265 - Fluoranthene	EPA 8270D SIM	10242509	NELAP	LA
6270 - Fluorene	EPA 8270D SIM	10242509	NELAP	LA
6315 - Indeno(1,2,3-cd)pyrene	EPA 8270D SIM	10242509	NELAP	LA
5005 - Naphthalene	EPA 8270D SIM	10242509	NELAP	LA
6615 - Phenanthrene	EPA 8270D SIM	10242509	NELAP	LA
6665 - Pyrene	EPA 8270D SIM	10242509	NELAP	LA
1510 - Amenable cyanide	EPA 9010C	10243002	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Material Name	Method Name	Method Code	Type	Lab
1645 - Total Cyanide	EPA 9010C	10243002	NELAP	LA
1510 - Amenable cyanide	EPA 9012B	10243206	NELAP	LA
1635 - Cyanide	EPA 9012B	10243206	NELAP	LA
1900 - pH	EPA 9045D	10244607	NELAP	LA
2040 - Total Organic Carbon	EPA 9060A	10244801	NELAP	LA
1745 - Free liquid	EPA 9095B	10245600	NELAP	LA
1406 - Purge and trap for aqueous phase samples	EPA 5030C	10284603	NELAP	LA
1450 - Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples	EPA 5035A	10284807	NELAP	LA
4350 - Allyl alcohol	EPA 8015D	10305609	NELAP	LA
9408 - Gasoline range organics (GRO)	EPA 8015D	10305609	NELAP	LA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8015D	10305609	NELAP	LA
4420 - tert-Butyl alcohol	EPA 8015D	10305609	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260C	10307003	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA 8260C	10307003	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260C	10307003	NELAP	LA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260C	10307003	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA 8260C	10307003	NELAP	LA
4630 - 1,1-Dichloroethane	EPA 8260C	10307003	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4670 - 1,1-Dichloropropene	EPA 8260C	10307003	NELAP	LA
5150 - 1,2,3-Trichlorobenzene	EPA 8260C	10307003	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA 8260C	10307003	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA 8260C	10307003	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA 8260C	10307003	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260C	10307003	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260C	10307003	NELAP	LA
4697 - 1,2-Dichloro-1,1,2-trifluoroethane	EPA 8260C	10307003	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260C	10307003	NELAP	LA
4655 - 1,2-Dichloropropane	EPA 8260C	10307003	NELAP	LA
6800 - 1,3,5-Trichlorobenzene	EPA 8260C	10307003	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA 8260C	10307003	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4660 - 1,3-Dichloropropane	EPA 8260C	10307003	NELAP	LA
4675 - 1,3-Dichloropropene	EPA 8260C	10307003	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA 8260C	10307003	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260C	10307003	NELAP	LA
100276 - 1-Chloro-2-methylpropane	EPA 8260C	10307003	NELAP	LA
4480 - 1-Chlorobutane	EPA 8260C	10307003	NELAP	LA
4510 - 1-Chlorohexane	EPA 8260C	10307003	NELAP	LA
5220 - 2,2,4-Trimethylpentane (Isooctane)	EPA 8260C	10307003	NELAP	LA
4665 - 2,2-Dichloropropane	EPA 8260C	10307003	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260C	10307003	NELAP	LA
4490 - 2-Chloroethanol	EPA 8260C	10307003	NELAP	LA
4500 - 2-Chloroethyl vinyl ether	EPA 8260C	10307003	NELAP	LA
4535 - 2-Chlorotoluene	EPA 8260C	10307003	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Material Name	EPA Method	Method Code	Agency	State
4860 - 2-Hexanone	EPA 8260C	10307003	NELAP	LA
4937 - 2-Methylbutadiene (Isoprene)	EPA 8260C	10307003	NELAP	LA
4938 - 2-Methylbutane (Isopentane)	EPA 8260C	10307003	NELAP	LA
4941 - 2-Methylpentane (Isohexane)	EPA 8260C	10307003	NELAP	LA
5020 - 2-Nitropropane	EPA 8260C	10307003	NELAP	LA
5045 - 2-Pentanone	EPA 8260C	10307003	NELAP	LA
4534 - 3-Methylpentane	EPA 8260C	10307003	NELAP	LA
4540 - 4-Chlorotoluene	EPA 8260C	10307003	NELAP	LA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260C	10307003	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260C	10307003	NELAP	LA
100222 - 4-Methylstyrene	EPA 8260C	10307003	NELAP	LA
4315 - Acetone	EPA 8260C	10307003	NELAP	LA
4320 - Acetonitrile	EPA 8260C	10307003	NELAP	LA
4325 - Acrolein (Propenal)	EPA 8260C	10307003	NELAP	LA
4340 - Acrylonitrile	EPA 8260C	10307003	NELAP	LA
4350 - Allyl alcohol	EPA 8260C	10307003	NELAP	LA
4355 - Allyl chloride (3-Chloropropene)	EPA 8260C	10307003	NELAP	LA
4375 - Benzene	EPA 8260C	10307003	NELAP	LA
100223 - Benzoyl chloride	EPA 8260C	10307003	NELAP	LA
5635 - Benzyl chloride	EPA 8260C	10307003	NELAP	LA
4385 - Bromobenzene	EPA 8260C	10307003	NELAP	LA
4390 - Bromochloromethane	EPA 8260C	10307003	NELAP	LA
4395 - Bromodichloromethane	EPA 8260C	10307003	NELAP	LA
4400 - Bromoform	EPA 8260C	10307003	NELAP	LA
4450 - Carbon disulfide	EPA 8260C	10307003	NELAP	LA
4455 - Carbon tetrachloride	EPA 8260C	10307003	NELAP	LA
4475 - Chlorobenzene	EPA 8260C	10307003	NELAP	LA
4575 - Chlorodibromomethane (dibromochloromethane)	EPA 8260C	10307003	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA 8260C	10307003	NELAP	LA
4505 - Chloroform	EPA 8260C	10307003	NELAP	LA
4525 - Chloroprene (2-Chloro-1,3-butadiene)	EPA 8260C	10307003	NELAP	LA
4555 - Cyclohexane	EPA 8260C	10307003	NELAP	LA
4560 - Cyclohexanone	EPA 8260C	10307003	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260C	10307003	NELAP	LA
4580 - Dibromochloropropane	EPA 8260C	10307003	NELAP	LA
4590 - Dibromofluoromethane	EPA 8260C	10307003	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA 8260C	10307003	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260C	10307003	NELAP	LA
4627 - Dichlorofluoromethane (Freon 21)	EPA 8260C	10307003	NELAP	LA
4653 - Dicyclopentadiene	EPA 8260C	10307003	NELAP	LA
4725 - Diethyl ether	EPA 8260C	10307003	NELAP	LA
4745 - Epichlorohydrin (1-Chloro-2,3-epoxypropane)	EPA 8260C	10307003	NELAP	LA
4750 - Ethanol	EPA 8260C	10307003	NELAP	LA
4755 - Ethyl acetate	EPA 8260C	10307003	NELAP	LA
4765 - Ethylbenzene	EPA 8260C	10307003	NELAP	LA
7645 - Furfural	EPA 8260C	10307003	NELAP	LA
4825 - Heptane	EPA 8260C	10307003	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8260C	10307003	NELAP	LA
4870 - Iodomethane (Methyl iodide)	EPA 8260C	10307003	NELAP	LA
4875 - Isobutyl alcohol (2-Methyl-1-	EPA 8260C	10307003	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Analyte	Method Name	Method Code	Lead	AI
propanol)				
100145 - Isopropyl Ether	EPA 8260C	10307003	NELAP	LA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8260C	10307003	NELAP	LA
4900 - Isopropylbenzene (Cumene)	EPA 8260C	10307003	NELAP	LA
4925 - Methacrylonitrile	EPA 8260C	10307003	NELAP	LA
4940 - Methyl acetate	EPA 8260C	10307003	NELAP	LA
4945 - Methyl acrylate	EPA 8260C	10307003	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA 8260C	10307003	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA 8260C	10307003	NELAP	LA
4990 - Methyl methacrylate	EPA 8260C	10307003	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260C	10307003	NELAP	LA
4966 - Methylcyclopentane	EPA 8260C	10307003	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA 8260C	10307003	NELAP	LA
5005 - Naphthalene	EPA 8260C	10307003	NELAP	LA
5015 - Nitrobenzene	EPA 8260C	10307003	NELAP	LA
5035 - Pentachloroethane	EPA 8260C	10307003	NELAP	LA
5040 - Pentafluorobenzene	EPA 8260C	10307003	NELAP	LA
5028 - Pentane	EPA 8260C	10307003	NELAP	LA
5080 - Propionitrile (Ethyl cyanide)	EPA 8260C	10307003	NELAP	LA
5100 - Styrene	EPA 8260C	10307003	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260C	10307003	NELAP	LA
5120 - Tetrahydrofuran (THF)	EPA 8260C	10307003	NELAP	LA
9574 - Tetrahydrothiophene	EPA 8260C	10307003	NELAP	LA
5140 - Toluene	EPA 8260C	10307003	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260C	10307003	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260C	10307003	NELAP	LA
5225 - Vinyl acetate	EPA 8260C	10307003	NELAP	LA
5235 - Vinyl chloride	EPA 8260C	10307003	NELAP	LA
5260 - Xylene (total)	EPA 8260C	10307003	NELAP	LA
4705 - cis & trans-1,2-Dichloroethene	EPA 8260C	10307003	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA 8260C	10307003	NELAP	LA
4600 - cis-1,4-Dichloro-2-butene	EPA 8260C	10307003	NELAP	LA
5240 - m+p-xylene	EPA 8260C	10307003	NELAP	LA
5245 - m-Xylene	EPA 8260C	10307003	NELAP	LA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8260C	10307003	NELAP	LA
4435 - n-Butylbenzene	EPA 8260C	10307003	NELAP	LA
4855 - n-Hexane	EPA 8260C	10307003	NELAP	LA
5055 - n-Propanol (1-Propanol)	EPA 8260C	10307003	NELAP	LA
100273 - n-Propylacetate	EPA 8260C	10307003	NELAP	LA
5090 - n-Propylbenzene	EPA 8260C	10307003	NELAP	LA
5250 - o-Xylene	EPA 8260C	10307003	NELAP	LA
5255 - p-Xylene	EPA 8260C	10307003	NELAP	LA
4440 - sec-Butylbenzene	EPA 8260C	10307003	NELAP	LA
100275 - sec-Butylether	EPA 8260C	10307003	NELAP	LA
4420 - tert-Butyl alcohol	EPA 8260C	10307003	NELAP	LA
4445 - tert-Butylbenzene	EPA 8260C	10307003	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA 8260C	10307003	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA 8260C	10307003	NELAP	LA
4605 - trans-1,4-Dichloro-2-butene	EPA 8260C	10307003	NELAP	LA

Pace Analytical Services LLC - New Orleans

Effective Date: July 1, 2021

Certificate Number: 02006

AI Number: 22756
Activity No.: ACC20210002
Expiration Date: June 30, 2022

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Sample	Method Name	Method Code	Type	Lab
9369 - Diesel range organics (DRO)	MADEP EPH, Rev.1.1	90017202	NELAP	LA
9408 - Gasoline range organics (GRO)	MADEP VPH, Rev.1.1	90017406	NELAP	LA

Biological Tissue

Sample	Method Name	Method Code	Type	Lab
NONE	NONE	NONE	NONE	NONE

APPENDIX G

(Compliance Standards)

COMPLIANCE STANDARDS

TABLE 1. COMPLIANCE STANDARDS (EPA, VARIOUS, SEE REFERENCES BELOW).

		GWPS	GWPS	Other Sources	Source
Constituent	Unit	EPA Primary	EPA Secondary	EPA Advisory	(see References below)
	(µg/L)	MCL / RSL (mg/L)	MCL / RSL (mg/L)	(mg/L)	
Arsenic	10	0.01			(1) National Primary Drinking Water Regulations
Barium	2000	2			(1) National Primary Drinking Water Regulations
Cadmium	5	0.005			(1) National Primary Drinking Water Regulations
Chloride	250000		250		(2) National Secondary Drinking Water Regulations
Chromium	100	0.1			(1) National Primary Drinking Water Regulations
Cyanide	200				(4) RSL Resident Tapwater
Iron	300		0.3		(2) National Secondary Drinking Water Regulations
Lead	15	0.015			(1) National Primary Drinking Water Regulations
Manganese	50		0.05		(2) National Secondary Drinking Water Regulations
Mercury	2	0.002			(1) National Primary Drinking Water Regulations



COMPLIANCE STANDARDS

		GWPS	GWPS	Other Sources	Source
Constituent	Unit	EPA Primary	EPA Secondary	EPA Advisory	(see References below)
	(µg/L)	MCL / RSL (mg/L)	MCL / RSL (mg/L)	(mg/L)	
Selenium	50	0.05			(1) National Primary Drinking Water Regulations
Sodium	60000			60	(5) EPA Drinking Water Advisory
1,1,1-Trichloroethane	200	0.2			(3) RSL Resident Soil to GW to GW
1,1,2,2- Tetrachloroethane	0.076				(4) RSL Resident Tapwater
1,1,2-Trichloroethane	5	0.005			(1) National Primary Drinking Water Regulations
1,1- Dichloroethane	2.8				(4) RSL Resident Tapwater
1,1- Dichloroethene	7	0.007			(4) RSL Resident Tapwater
1,2- Dichloroethane	5	0.005			(1) National Primary Drinking Water Regulations
1,2-Dichloro-propane	5				(4) RSL Resident Tapwater
1,4-Dichloro-benzene	75	0.075			(3) RSL Resident Soil to GW to GW
2-Chloroethyl vinyl ether	5				(6) EPA Fact Sheet
Benzene	5	0.005			(3) RSL Resident Soil to GW to GW



COMPLIANCE STANDARDS

		GWPS	GWPS	Other Sources	Source
Constituent	Unit	EPA Primary	EPA Secondary	EPA Advisory	(see References below)
	(µg/L)	MCL / RSL (mg/L)	MCL / RSL (mg/L)	(mg/L)	
Bromodichloromethane	80	0.08			(3) RSL Resident Soil to GW to GW
Bromoform	80				(4) RSL Resident Tapwater
Carbon Tetrachloride	5				(4) RSL Resident Tapwater
Chlorobenzene	100	0.1			(3) RSL Resident Soil to GW to GW
Chloroform	80	0.08			(3) RSL Resident Soil to GW to GW
cis-1,2-Dichloroethane	70	0.07			(4) RSL Resident Tapwater
Dibromo- chloromethane	80				(4) RSL Resident Tapwater
Ethyl Benzene	700	0.7			(3) RSL Resident Soil to GW to GW
Heptachlor	0.4	0.0004			(3) RSL Resident Soil to GW to GW
Methyl Chloride	19				(4) RSL Resident Tapwater
Tetrachloro- ethylene	5	0.005			(1) National Primary Drinking Water Regulations
Toluene	1000	1			(3) RSL Resident Soil to GW to GW



COMPLIANCE STANDARDS

		GWPS	GWPS	Other Sources	Source
Constituent	Unit	EPA Primary	EPA Secondary	EPA Advisory	(see References below)
	(µg/L)	MCL / RSL (mg/L)	MCL / RSL (mg/L)	(mg/L)	
Total Phenols					
Trans-1,2 Dichloroethene	100	0.1			(3) RSL Resident Soil to GW to GW
Trichloroethylene	5	0.005			(1) National Primary Drinking Water Regulations
Trichloro- fluoromethane	520				(4) RSL Resident Tapwater
Vinyl Chloride	2	0.002			(3) RSL Resident Soil to GW to GW
References:					
(1) National Primary Drinking Water Regulations			https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations		
(2) National Secondary Drinking Water Regulations			https://www.epa.gov/sdwa/drinking-water-regulations-and-contaminants		
(3) RSL Resident Soil to GW			https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables		
(4) RSL Resident Tapwater			https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables		
(5) EPA Drinking Water Advisory			https://www.epa.gov/sites/default/files/2014-09/documents/support_cc1_sodium_dwreport.pdf		
(6) EPA Fact Sheet			https://archive.epa.gov/water/archive/web/pdf/archived-consumer-factsheet-on-1-1-2-trichloroethane.pdf		



	BOUNDARY LINE
	RIGHT-OF-WAY
	QUARTER LINE
	SECTION LINE
	LINE NOT TO SCALE
	WIRE FENCE
	OVERHEAD ELECTRICAL
	UNDERGROUND ELECTRICAL
	EXISTING CONCUR 5' INTERVAL
	EXISTING CONCUR 1' INTERVAL
	EXISTING STORM DRAIN
	EXISTING TRELISE
	EXISTING SIGN
	POWER POLE
	EXISTING GUY ANCHOR
	EXISTING MONITORING WELL
	IRON PIPE FOUND
	CAPPED REBAR FOUND
	5/8" HINDMAN REBAR SET
	CONCRETE MONUMENT FOUND
	WOOD POST FOUND
	CONTROL POINT
ROW*	RIGHT-OF-WAY
PB	PLAT BOOK
DB	DEED BOOK
PG	PAGE

	EXISTING CONCRETE PAVEMENT
	EXISTING ASPHALT PAVEMENT
	EXISTING BUILDING
	EXISTING GRAVEL DRIVE

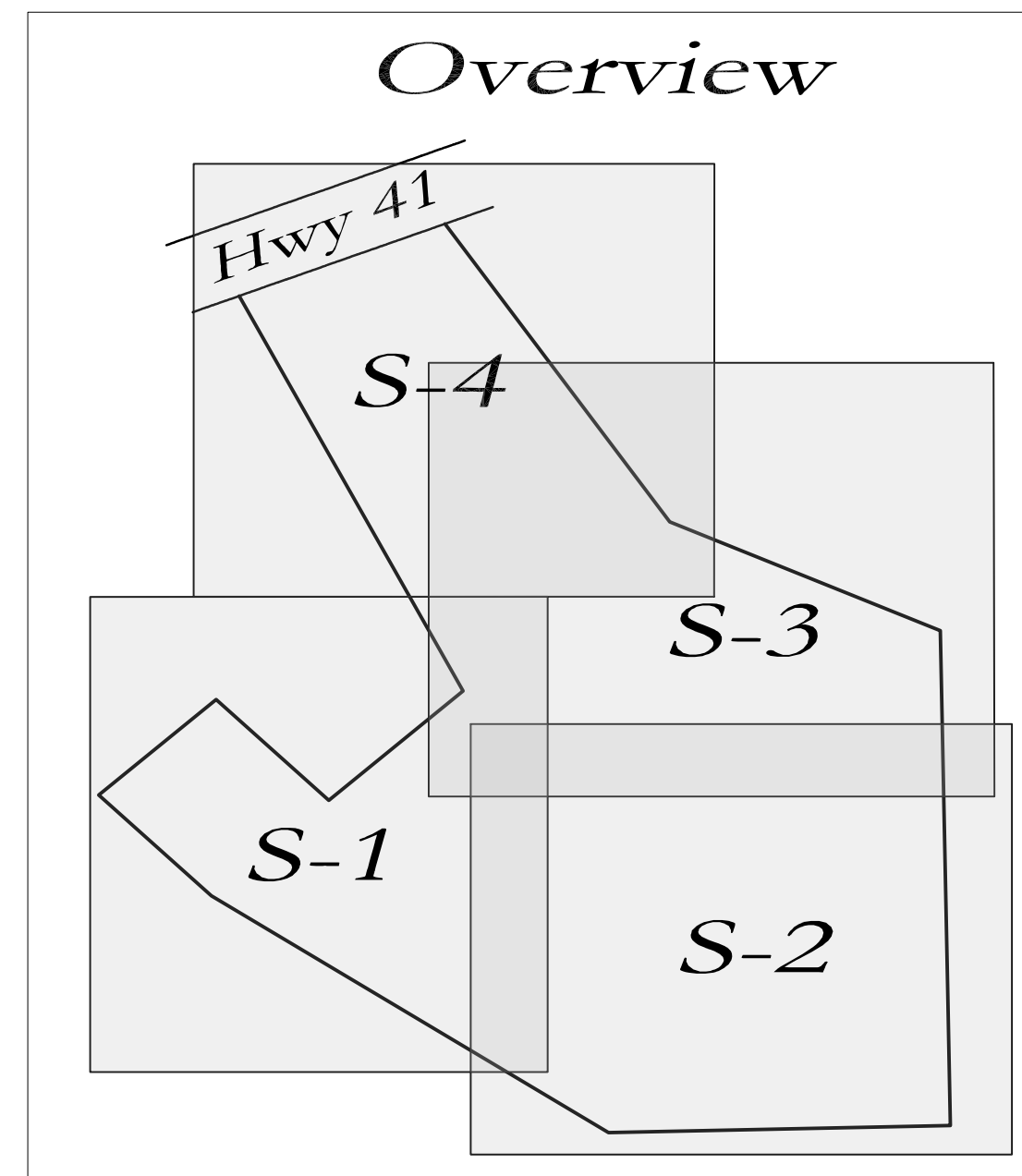
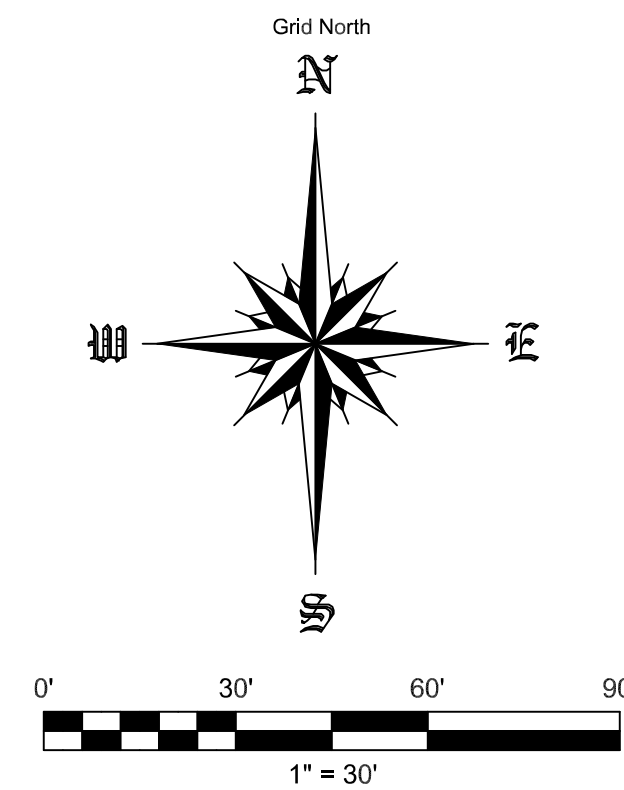


General Notes:

1. This survey and drawing was completed without benefit of a title search or opinion. Therefore there may be easements and rights-of-ways which are not shown on this drawing.
2. There was no request for or attempt made to locate or show any sub-surface features or utilities, other than visual observations discovered, at the time of this survey.
3. All bearings and coordinates are referenced to Grid North, State Plane Coordinates NAD83 Alabama West Zone 0102, Vertical Datum NAVD 88, using GNSS observations ALDOT CORS Network.
4. Source of Title: Deed Book 8S, Page 506

Site Control				
Point	Northing	Easting	Elevation	Description
1	731384.703	2046058.476	270.83	spike
2	731444.613	2046089.825	272.85	PK
4	731970.739	2045431.088	292.54	PK
5	731915.966	2045385.717	284.00	NAIL

Tax ID# 66-15-05-15-0-000-003.000
Russell Timberlands LLC
Deed Book 11X, Page 386



I, Blake Matthew Hindman, a Licensed Professional Land Surveyor in the State of Alabama of Hindman Surveying, LLC of Coker, Alabama, hereby certify that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief.

Surveyor's Signature:

Blake M. Hindman

Alabama License No. 33668 Date 6/26/202

S-1

Sheet No 1 Of 4

Hindman Surveying, LLC
Professional Land Surveying

P(205) 737-5841
blake@hindmans

115900 Jackson Trace Road
Coker, AL 35452

Topographic & Boundary Survey

Survey
Wilcox County Land Fill
1612 AL 41 Camden, AL 36726

Section 15, Township 12 North, Range 8 East
Wilcox County, Alabama

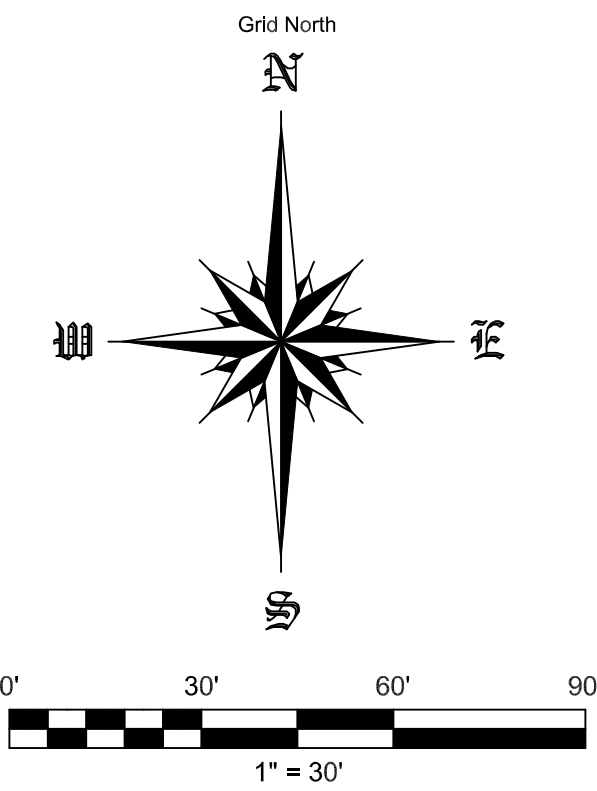
CAD:	26-047 Wilcox Landfill.dwg
Drawn By:	B.M.H.
Checked By:	A.L.W.
Dates Drawn:	6/23/2026 - 6/25/2026
Dates Surveyed:	6/22/2026 - 6/22/2026
Date	Revision



LEGEND

- BOUNDARY LINE
RIGHT-OF-WAY
QUARTER LINE
SECTION LINE
LINE NOT TO SCALE
WIRE FENCE
OVERHEAD ELECTRICAL
UNDERGROUND ELECTRICAL
EXISTING CONTOUR 5' INTERVAL
EXISTING CONTOUR 1' INTERVAL
EXISTING STORM DRAIN
EXISTING TREELINE
EXISTING SIGN
POWER POLE
EXISTING GUY ANCHOR
EXISTING MONITORING WELL
IRON PIPE FOUND
CAPPIED REBAR FOUND
5/8" HINDMAN REBAR SET
CONCRETE MONUMENT FOUND
WOOD POST FOUND
CONTROL POINT
RIGHT-OF-WAY
PLAT BOOK
DEED BOOK
PAGE

- EXISTING CONCRETE PAVEMENT
EXISTING ASPHALT PAVEMENT
EXISTING BUILDING
EXISTING GRAVEL DRIVE

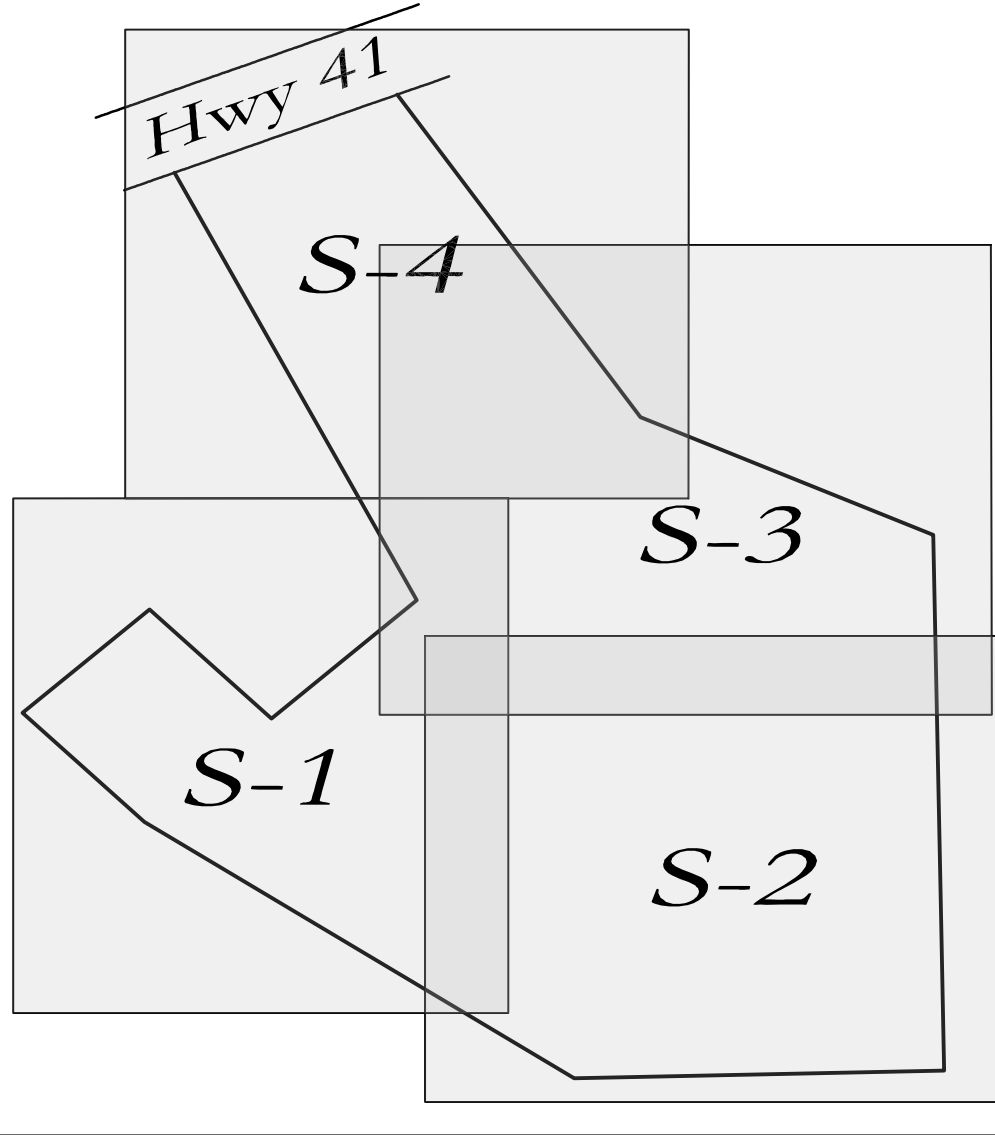


S-1

S-3



Overview



General Notes:

- This survey and drawing was completed without benefit of a title search or opinion. Therefore there may be easements and rights-of-ways which are not shown on this drawing.
- There was no request for or attempt made to locate or show any sub-surface features or utilities, other than visual observations discovered, at the time of this survey.
- All bearings and coordinates are referenced to Grid North, State Plane Coordinates NAD83 Alabama West Zone 0102, Vertical Datum NAVD 88, using GNSS observations ALDOT CORS Network.
- Source of Title: Deed Book 8S, Page 506

Site Control

Point	Northing	Easting	Elevation	Description
1	731584.703	2046058.476	270.83	spike
2	731444.613	2046089.825	272.85	PK
4	731970.739	2045431.088	292.54	PK
5	731915.966	2045385.717	284.00	NAIL

I, Blake Matthew Hindman, a Licensed Professional Land Surveyor in the State of Alabama of Hindman Surveying, LLC of Coker, Alabama, hereby certify that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief.

Surveyor's Signature:

Blake M. Hindman

Alabama License No. 33668 Date: 6/28/2026

S-2

Sheet No 2 of 4

Hindman Surveying, LLC
Professional Land Surveying

P(205) 737-5841
blake@hindmansurveying.com

15900 Jackson Trace Road
Coker, AL 35452

Topographic & Boundary
Survey
Wilcox County Land Fill
1612 AL 41 Camden, AL 36726
Section 15, Township 12 North, Range 8 East
Wilcox County, Alabama

Date	Revision
CAD: 26/04/2026 Wilcox Landfill.dwg	
Drawn By: B.M.H.	
Checked By: A.L.W.	
Dates Surveyed: 6/28/2026 - 6/28/2026	

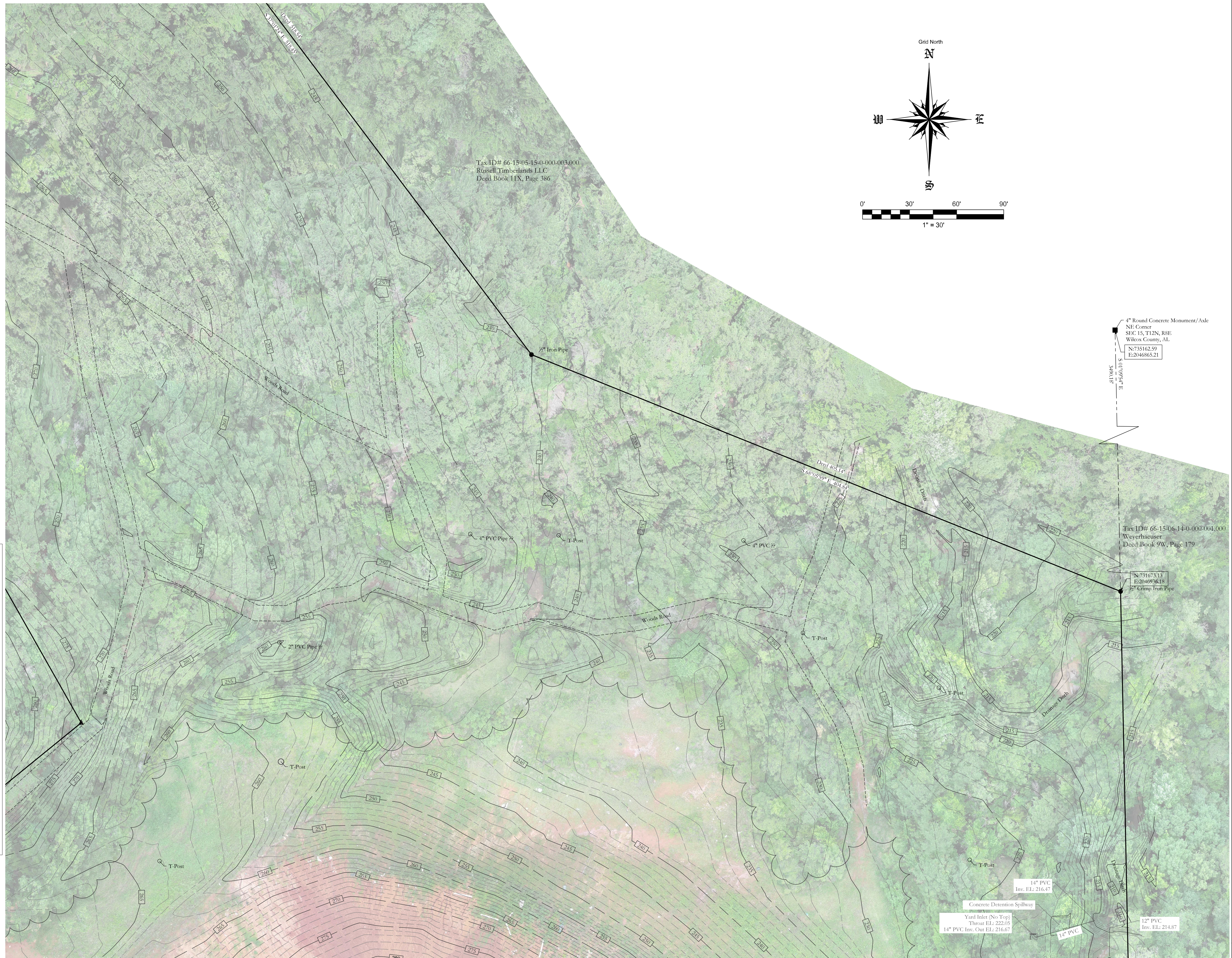


	BOUNDARY LINE
	RIGHT-OF-WAY
	QUARTER LINE
	SECTION LINE
	LINE NOT TO SCALE
	WIRE FENCE
	OVERHEAD ELECTRICAL
	UNDERGROUND ELECTRICAL
	EXISTING CONTOUR 5' INTERVAL
	EXISTING CONTOUR 1' INTERVAL
	EXISTING STORM DRAIN
	EXISTING TRELISE
	EXISTING SIGN
	POWER POLE
	EXISTING GUY ANCHOR
	EXISTING MONITORING WELL
	IRON PIPE FOUND
	CAPPED REBAR FOUND
	5/8" HINDMAN REBAR SET
	CONCRETE MONUMENT FOUND
	WOOD POST FOUND
	CONTROL POINT
ROW	RIGHT-OF-WAY
PB	PLAT BOOK
DB	DIED BOOK
PAGE	PAGE

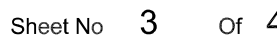
	EXISTING CONCRETE PAVEMENT
	EXISTING ASPHALT PAVEMENT
	EXISTING BUILDING
	EXISTING GRAVEL DRIVE

1. This survey and drawing was completed without benefit of a title search or opinion. Therefore there may be easements and rights-of-ways which are not shown on this drawing.
2. There was no request for or attempt made to locate or show any sub-surface features or utilities, other than visual observations discovered, at the time of this survey.
3. All bearings and coordinates are referenced to Grid North, State Plane Coordinates NAD83 Alabama West Zone 0102, Vertical Datum NAVD 88, using GNSS observations ALDOT CORS Network.
4. Source of Title: Deed Book 8S, Page 506

Site Control				
Point	Northing	Easting	Elevation	Description
1	731384.703	2046058.476	270.83	spike
2	731444.613	2046089.825	272.85	PK
4	731970.739	2045431.088	292.54	PK
5	731915.966	2045385.717	284.00	NAIL



Blake M. Hindman



Hindman Surveying, LLC
Professional Land Surveying

P(205) 737-5841
blake@hindmans

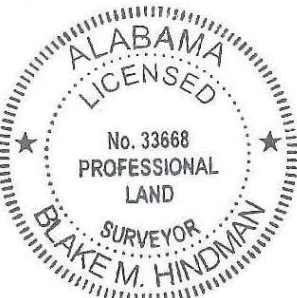
15900 Jackson Trace Road
Coker, AL 35452

Topographic & Boundary Survey

Wilcox County Land Fill
1612 AL 41 Camden, AL 36726

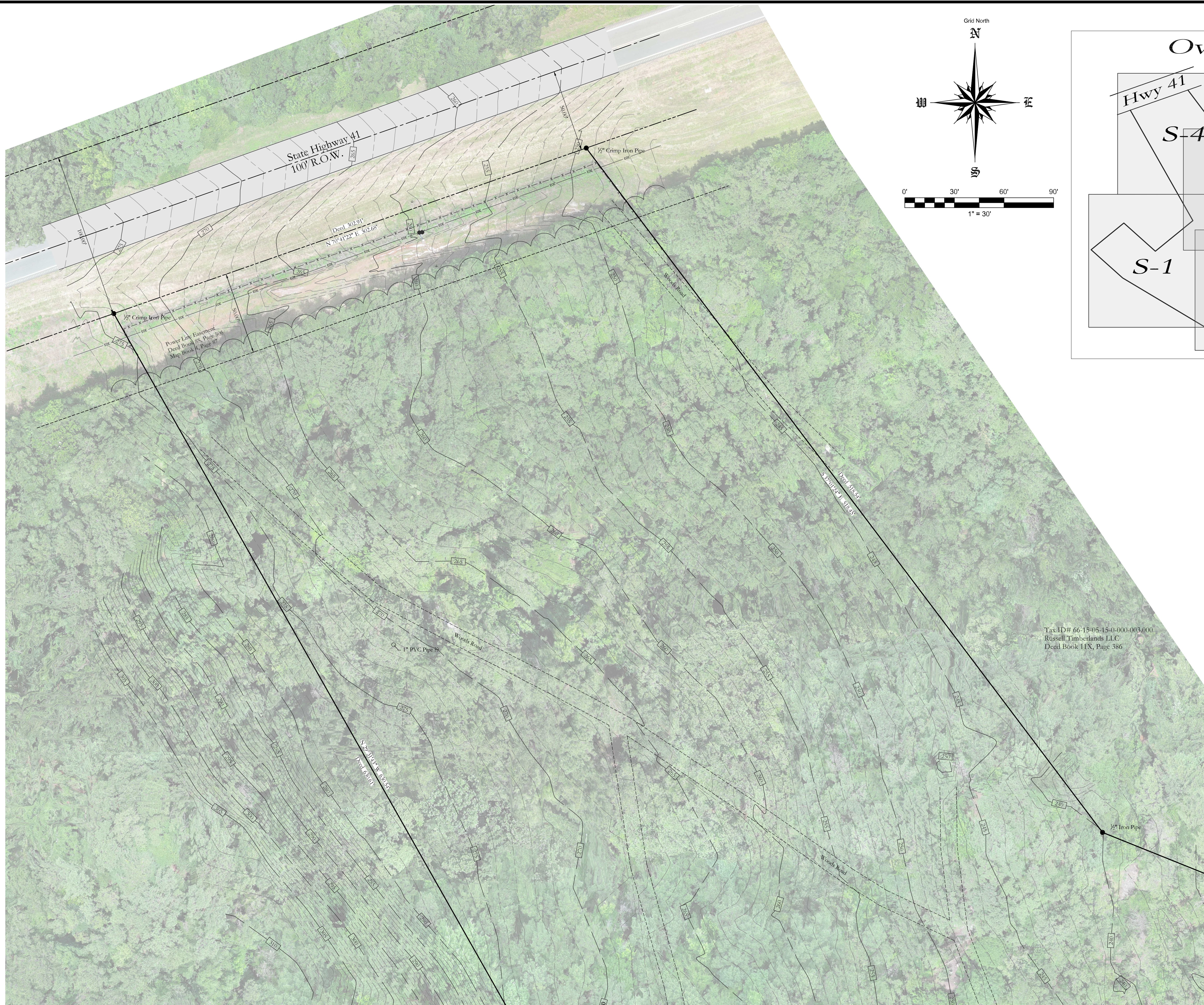
Section 15, Township 12 North, Range 8 East
Wilcox County, Alabama

Date	Revision
CAD: 26-047 Wilcox Landfill.dwg	
Drawn By: B.M.H.	
Checked By: A.L.W.	
Dates Drawn:	6/23/2026 - 6/25/2026
Dates Surveyed:	6/2/2026 - 6/22/2026



	BOUNDARY LINE
	RIGHT-OF-WAY
	QUARTER LINE
	SECTION LINE
	LINE NOT TO SCALE
	WIRE FENCE
	OVERHEAD ELECTRICAL
	UNDERGROUND ELECTRICAL
	EXISTING CONTOUR 5' INTERVAL
	EXISTING CONTOUR 1' INTERVAL
	EXISTING STORM DRAIN
	EXISTING TREELINE
	EXISTING SIGN
	POWER POLE
	EXISTING GUY ANCHOR
	EXISTING MONITORING WELL
	IRON PIPE FOUND
	CAPPED REBAR FOUND
	5/8" HINDMAN REBAR SET
	CONCRETE MONUMENT FOUND
	WOOD POST FOUND
	CONTROL POINT
	RIGHT-OF-WAY
PI	PLAT BOOK
DB	DEED BOOK
PG	PAGE

	EXISTING CONCRETE PAVEMENT
	EXISTING ASPHALT PAVEMENT
	EXISTING BUILDING
	EXISTING GRAVEL DRIVE



S-1

1. This survey and drawing was completed without benefit of a title search or opinion. Therefore there may be easements and rights-of-ways which are not shown on this drawing.
2. There was no request for or attempt made to locate or show any sub-surface features or utilities, other than visual observations discovered, at the time of this survey.
3. All bearings and coordinates are referenced to Grid North, State Plane Coordinates NAD83 Alabama West Zone 0102, Vertical Datum NAVD 88, using GNSS observations ALDOT CORS Network.
4. Source of Title: Deed Book 8S, Page 506

Point	Northing	Easting	Elevation	Description
1	731384.703	2046058.476	270.83	spike
2	731444.613	2046089.825	272.85	PK
4	731970.739	2045431.088	292.54	PK
5	731915.966	2045385.717	284.00	NAIL

I, Blake Matthew Hindman, a Licensed Professional Land Surveyor in the State of Alabama of Hindman Surveying, LLC of Coker, Alabama, hereby certify that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief.

Surveyor's Signature:

Blake M. Hindman

Alabama License No. 33668 Date 6/26/2026

S-4

Sheet No 4 Of 4

Hindman Surveying, LLC
Professional Land Surveying

P(205) 737-5841
blake@hindmans

15900 Jackson Trace Road
Coker, AL 35452

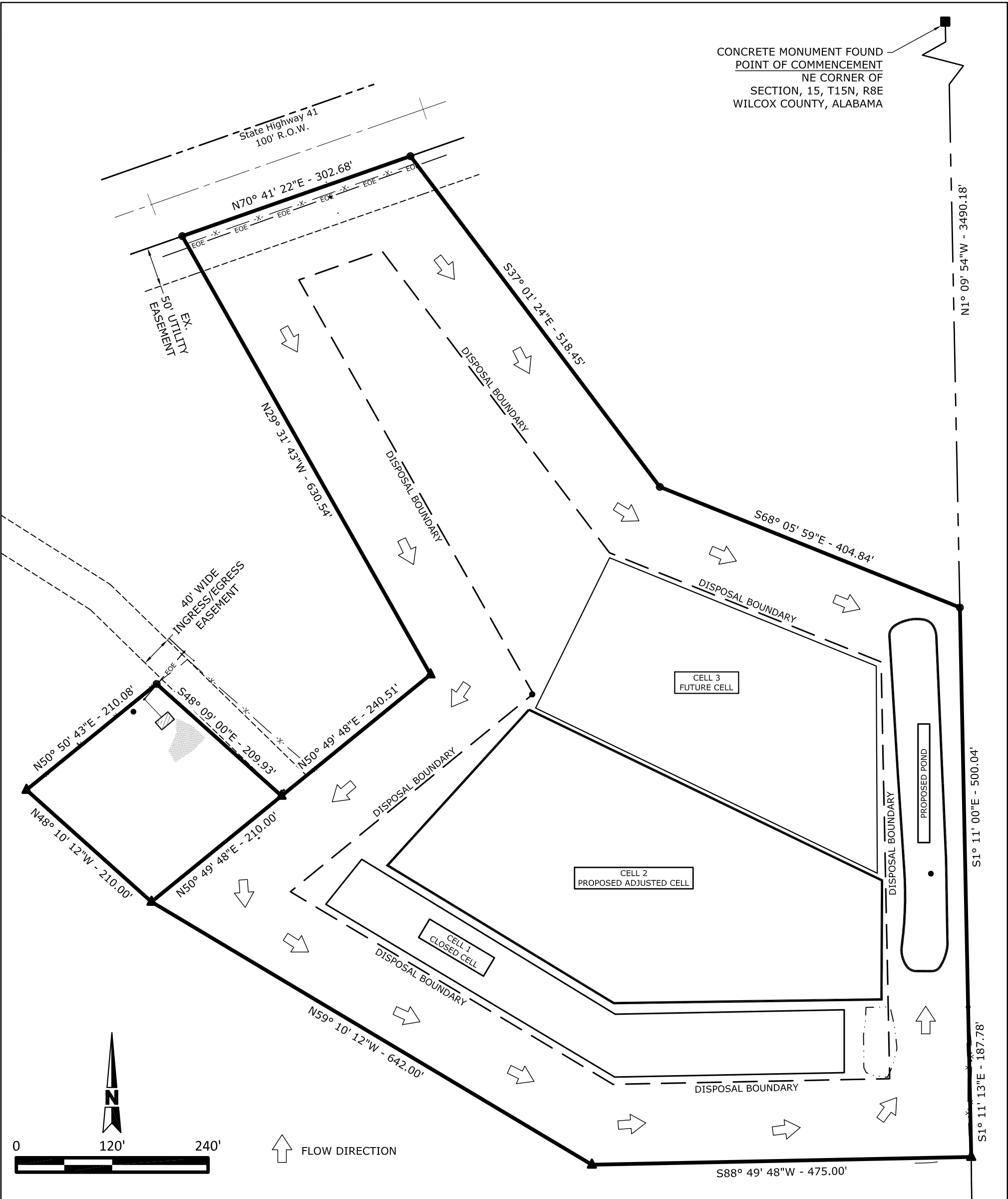
Topographic & Boundary Survey

Wilcox County Land Fill
1612 AL 41 Camden, AL 36726

Section 15, Township 12 North, Range 8 East
Wilcox County, Alabama

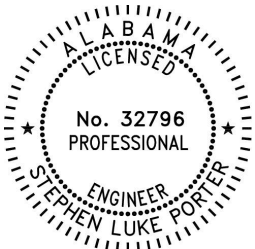
Date	Revision
CAD: 26-047 Wilcox Landfill.dwg	
Drawn By: B.M.H.	
Checked By: A.L.W.	
Dates Drawn: 6/23/2026 - 6/25/2026	
Dates Surveyed: 6/22/2026 - 6/22/2026	





CONCRETE MONUMENT FOUND
POINT OF COMMENCEMENT
NE CORNER OF
SECTION, 15, T15N, R8E
WILCOX COUNTY, ALABAMA

○	IRON PIPE / PIN FOUND	— — — — —	EX. BOUNDARY LINE	— — — — —	ESS	EX. SANITARY SEWER MAIN
⊙	CAPPED REBAR FOUND	— — — — —	EX. RIGHT-OF-WAY	— — — — —	EFM	EX. SANITARY SEWER FORCE MAIN
△	CONCRETE MONUMENT FOUND	— — — — —	EX. PROPERTY LINE	— — — — —	ESD	EX. STORM DRAIN
⬡	AXLE FOUND	— — — — —	EX. CHAIN LINK FENCE	— — — — —	EWM	EX. WATER MAIN
●	CAPPED REBAR SET	— — — — —	EX. IRON FENCE	— — — — —	EGM	EX. GAS MAIN
SEC	SECTION	— — — — —	EX. WIRE FENCE	— — — — —	EOE	EX. OVERHEAD ELECTRICAL
T	TOWNSHIP	— — — — —	EX. WOOD FENCE	— — — — —	EUP	EX. UNDERGROUND ELECTRICAL
R	RANGE	— — — — —	EX. CONTOUR 5' INTERVAL	— — — — —	EUC	EX. UNDERGROUND CABLE TELEVISION
R.O.W.	RIGHT-OF-WAY	— — — — —	EX. CONTOUR 1' INTERVAL	— — — — —	EOT	EX. OVERHEAD TELEPHONE
M.B.L.	MINIMUM BUILDING LINE	— — — — —	EX. CONCRETE PAVEMENT	— — — — —	EUT	EX. UNDERGROUND TELEPHONE
PB.	PLAT BOOK	— — — — —	EX. ASPHALT PAVEMENT			
DB.	DEED BOOK	— — — — —	EX. GRAVEL DRIVE			
PG.	PAGE					
EX.	EXISTING					



APPROVED BY:
PORTER-HIGGINBOTHAM ENGINEERING, INC.

Luke Porter
LUKE PORTER, P.E. AL REGISTRATION NO. 32796

5 PHE # 26.012 PROPOSED SURFACE DRAINAGE LAYOUT	WILCOX COUNTY LANDFILL PERMIT RENEWAL WILCOX COUNTY, ALABAMA 07/2026 DRAWN BY: JRA	TUSCALOOSA 2009 PAUL BRYANT DRIVE TUSCALOOSA, AL 35401 bruce@porterhigginbotham.com Phone:(205)860-5198 (O) FAYETTE 102 TEMPLE AVENUE SOUTH FAYETTE, AL 35555 luke@porterhigginbotham.com Phone:(205)932-3478 (O)	 PORTER-HIGGINBOTHAM ENGINEERING, INC.
---	--	--	--

<u>FULLNAME_OR_ORG</u>	<u>ADDRESS</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP</u>	<u>EMAIL</u>	<u>PHONE</u>
Russell Timberlands LLC	3378 Tankview Court	Montgomery	AL	36104	unknown@unknown.com	000-000-0000

Column Header

FULLNAME_OR_ORG

ADDRESS

CITY

STATE

ZIP

EMAIL

PHONE

Field Name

Full Name/Organization

Address

City

State (ex: AL)

ZIP Code

Email

Phone

Help/Instructions

Full Name/Organization

Address

City

State

ZIP Code

Please enter a valid Email

Please enter a valid Phone

CERTIFICATION OF LOCAL GOVERNMENT APPROVAL:

Upon Submittal of this application, we the undersigned certify that local approval has been obtained from Wilcox County. Evidence of this local approval is contained in documents which are on file at the permit applicant's business address.

CERTIFICATION OF COMPLIANCE:

Upon Submittal of this application, we the undersigned certify that this document and all attachments submitted are to the best of our knowledge and belief, true, accurate, and complete. We also understand that if any of the material certified above has not been received, or is not complete or is not accurate, that shall be grounds for the Department to revoke the landfill permit if issued.

Signature (Responsible official of permit applicant):

TITLE: Wilcox County Engineer

Mr. Jody Camp, P.E. DATE: 7/31/26
(PRINT OR TYPE NAME)

Signature (Certifying Engineer):

Stephen L Porter TITLE: Principal

Stephen Luke Porter DATE: 7/31/26
(PRINT OR TYPE NAME)

Firm: Porter-Higginbotham Engineering, INC.

July 22, 2026

Mr. Jared D. Kelly, Chief
Solid Waste Engineering Section
Land Division
1400 Coliseum Boulevard
Montgomery, AL 36130-1463

**Re: Wilcox County Landfill
Permit No. 66-03
Endangered Species Letter**

Dear Mr. Kelly:

This letter is to inform you that the existence of the following endangered or threatened species will not be jeopardized by the operations of the Wilcox County Landfill, Permit No. 66-03:

Gray Bat *Myotis grisescens*

Northern Logn-Eared Bat *Myotis septentrionalis*

Tricolored Bat *Perimyotis subflavus*

Alligator snapping turtle *Macrochelys temminckii*

Alabama sturgeon *Scaphirhynchus suttkusi*

Monarch butterfly *Danaus Plexippus*

I have included a letter from Alabama Ecological Services Field Office stating the List of Endangered species in the project area for your reference.

Sincerely,

Luke Porter

Luke Porter, P.E.
Principal Porter-Higginbotham Engineering, Inc.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Alabama Ecological Services Field Office
1208 B Main Street
Daphne, AL 36526-4419
Phone: (251) 441-5181 Fax: (251) 441-6222
Email Address: alabama@fws.gov

In Reply Refer To:

07/21/2026 20:44:47 UTC

Project Code: 2026-0119385

Project Name: Wilcox County Landfill

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Project consultation requests may be submitted by mail or email (Alabama@fws.gov). **Ensure that the Project Code in the header of this letter is clearly referenced in any request for consultation or correspondence submitted to our office.**

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Ensure that the Project Code in the header of this letter is clearly referenced with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Alabama Ecological Services Field Office

1208 B Main Street

Daphne, AL 36526-4419

(251) 441-5181

PROJECT SUMMARY

Project Code: 2026-0119385

Project Name: Wilcox County Landfill

Project Type: Landfill - Solid Waste

Project Description: Landfill in Wilcox County that is approximately 18 acres in size.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@32.0112419,-87.2485019,1062625,14z>



Counties: Wilcox County, Alabama

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Northern Long-Eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

REPTILES

NAME	STATUS
Alligator snapping turtle <i>Macrochelys temminckii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

FISHES

NAME	STATUS
Alabama sturgeon <i>Scaphirhynchus suttkusi</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2552	Endangered

INSECTS

NAME	STATUS
Monarch butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: County of Wilcox
Name: Luke Porter
Address: 102 Temple Avenue South
City: Fayette
State: AL
Zip: 35555
Email: luke@porterhigginbotham.com
Phone: 2054429013

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Alabama Department of Environmental Management
Name: Jody Camp
Email: luke@porterhigginbotham.com
Phone: 3346825070



ALABAMA HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
SECTION 106 PROJECT REVIEW CONSULTATION FORM

Federal laws exist to ensure that federal agencies or their designated applicants carefully consider historic preservation in federally funded, licensed, or permitted projects. Section 106 of the National Historic Preservation Act of 1966, as amended directs this review. <http://www.achp.gov/106summary.html>. At a minimum, submission of this completed form and attachments constitutes a request for review by the Alabama Historical Commission, which is the Alabama State Historic Preservation Office (SHPO). **The responsibility for preparing documentation, including the identification of archaeological and architectural properties and the assessment of potential effects resulting from the project, rests with the federal or state agency, or its designated applicant.** The role of the Alabama SHPO is to review, comment, and consult with federal/state agencies or their designees. The Alabama SHPO's ability to complete a timely project review largely depends on the quality of the material submitted. Some applicants may find it advantageous to hire a professional consultant with expertise in archaeology, history and/or architectural history.

PROJECT NAME

Wilcox County Landfill

FEDERAL AGENCY PROVIDING FUNDS, LICENSE, OR PERMIT

NA

FEDERAL PROJECT NUMBER

NA

FEDERAL AGENCY CONTACT NAME AND E-MAIL/PHONE NUMBER

NA

STATE AGENCY PROVIDING FUNDS, LICENSE, OR PERMIT (IF APPLICABLE)

Alabama Department of Environmental Management

STATE AGENCY CONTACT NAME AND E-MAIL ADDRESS, PHONE NUMBER, MAILING ADDRESS

Dontavious Sippial/dontavious.sippial@adem.alabama.gov/334-270-5651/1400 Coliseum Blvd Montgomery, AL 36110-2400

AHC NUMBER (If project has been previously submitted)

NA

APPLICANT NAME:

Wilcox County Commission

APPLICANT MAILING ADDRESS:

P.O. Box 490 Camden, Alabama 36726

APPLICANT TELEPHONE:

334-682-4725

APPLICANT EMAIL:

wilcoengr@gmail.com

CONTACT NAME (if different than applicant):

Luke Porter

CONTACT MAILING ADDRESS:

102 Temple Avenue South Fayette, AL 35555

CONTACT TELEPHONE:

205-442-9013

CONTACT EMAIL (Person to whom AHC should email response letter):

luke@porterhigginbotham.com

CONTRACTOR TYPE: ☐ ARCHAEOLOGIST; ☐ ARCHITECTURAL HISTORIAN; ☒ NONE; ☐ OTHER:

CONTRACTOR NAME:

NA

CONTRACTOR MAILING ADDRESS:

NA

CONTRACTOR TELEPHONE:

NA

CONTRACTOR EMAIL:

NA

PROJECT LOCATION	
STREET ADDRESS 1612 Highway 41	CITY Camden
COUNTY Wilcox County	ZIP CODE 36726
LATITUDE / LONGITUDE: USE DECIMAL DEGREES EXAMPLE: 32.3722N, -86.3083W 32.0110N, -87.2639W	
PROJECT DESCRIPTION	
Will the project involve any of the following? Check all that apply. ☐ exterior rehabilitation work; ☐ interior rehabilitation work; ☐ cellular equipment located on buildings; ☐ streetscapes/sidewalks/lighting; ☒ new construction; and/or ☐ demolition Describe the overall project in DETAIL. Be sure to describe any items checked above. Use additional pages if necessary. This project includes a commercial and demolition landfill that is currently serving Camden and the residents of Wilcox County. No hazardous waste, municipal or sanitary waste are accepted at this site. The development of the construction and demolition landfill and the completed final surfaces will generally conform to the existing slopes, which run southwest and east from a ridge which itself slopes to the southeast portion of the site. The slopes average at a ten percent grade. The design, construction, operation and close-out of the site will incorporate good environmental practices to protect surface and subsurface quality. Surface water diversions such as ditches, dikes, terraces, and piping will channel surface runoff between the cells to sedimentation ponds near the southeast corner of the property to allow for settling of excessive silt and suspended solids caused by the construction operations. The existing site consist of approximately 18.61 acres. 9.14 of these acres are actually used for disposal area. The disposal area consist of 3 cells. 1 of these cells is already in use and the use of cell 2 will happen in the near future. Each construction of each cell consist of digging a hole, placing commercial and demolition waste in the excavated hole, then covering the waste in accordance with ADEM regulations.	

AREA OF POTENTIAL EFFECT (APE)

The APE varies with project types and can be direct or indirect (physical, visual, auditory, etc.). The APE is defined as “the geographic area or areas within which an undertaking may cause changes in the character of use of historic properties, if any such properties exist.” Factors to consider when determining the APE include; topography, vegetation, existing development, orientation of an existing resource to the project, physical siting of a resource, and existing and planned future development. For example:

- 1) Rehabilitation, renovation, and/or demolition of a historic building or structure, or new construction: the APE might include the building itself and the adjacent setting.
- 2) Streetscapes: the APE might include the viewshed from the street.
- 3) Pedestrian/bicycle facilities: the APE might extend the length of the corridor and for some distance on both sides of the corridor.
- 4) Underground utilities: the APE would usually be limited to the area of ground disturbance.

Attach a map indicating the precise location of the project and the boundaries of the APE, preferably a clear color copy of a USGS topographic quadrangle map (7.5 minute). For projects in urban areas, also include a city map that shows more detail. USGS topographic maps can be printed from this website: <https://ngmdb.usgs.gov/topoview/viewer/>. City maps can be printed using www.google.com/maps.

Provide current, high resolution color photographs that illustrate the project area and the entire APE as defined above.

ARCHAEOLOGY (Ground Disturbing Activities)

Has the ground in the project area been disturbed other than by agriculture (i.e. grading, grubbing, clear cutting, filling, etc.)?

☒ Yes ☐ No ☐ Don't know ☐ N/A

If yes, describe in detail. Use additional pages as necessary. Photographs are helpful.

It has been operating as a landfill for the past 30+ years.

Describe the present use and condition of the property. Use additional pages as necessary.

Commercial and Demolition Lanfill

To your knowledge, has a Cultural Resource Assessment (CRA) been conducted in the proposed project area?

☐ Yes ☐ No ☒ Don't know ☐ N/A

If yes, attach a copy of the cultural resources assessment report.

ARCHITECTURAL INFORMATION

Above-ground properties within the Area of Potential Effect (APE) should be evaluated for the eligibility for the National Register of Historic Places. It is the federal agency's (or their designee) responsibility to identify properties in the APE, apply the National Register (NR) criteria, and determine whether a property is eligible or not. Those determinations are sent to our office for review and comment. All properties evaluated should be accompanied by current photographs, and these locations should be keyed to a good quality USGS topographic map. Some applicants may find it advantageous to hire a historic preservation professional with expertise in history and/or architectural history to complete the identification and evaluation of historic properties. The Alabama Historical Commission publishes a GIS map of properties that have been documented by or through our office. The map includes properties listed in the National Register of Historic Places, Alabama Register of Landmarks & Heritage, Alabama Historic Cemetery Register, county architectural surveys, and other files. The GIS map can be accessed here: <https://ahc.alabama.gov/historicpreservationmap.aspx> The GIS map should function as a research tool, not an up-to-the-minute inventory about every historic and/or architecturally significant property in the state. This tool allows researchers to investigate and review potentially significant properties according to the best data that is available in the Alabama Historical Commission's files. The absence of a property from the map does not imply that an unidentified property lacks historic or architectural importance.

I) Within the APE, are there properties listed in or eligible for the National Register of Historic Places?

☐

YES If yes, identify the properties by name, address, and photo number.



NO If no, identify the properties by name, address, and photo number. Provide an explanation as to why properties identified are not eligible for the National Register. A discussion of the National Register seven aspects of integrity and the applicable National Register criteria must be included. Refer to the National Park Service's website: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf Use additional pages as necessary.

There are no above-ground properties within the area in question.

EFFECTS DETERMINATION

An effect occurs when an action alters the characteristics of a property that may qualify it for the National Register of Historic Places. How will this project affect any of the properties identified in the previous section? Will the project take away or change anything within the boundaries of a historic property? Will the project change the view from or the view to any historic properties? Will the project introduce any audible or atmospheric elements? Will the project result in the transfer, lease, or sale of any of the identified properties? Use additional sheets as necessary.

The landfill will have no effect on the properties listed.

CHECKLIST: Did you provide the following information?

☒ Completed form.	☒ Photographs* of current site conditions and all identified historic properties keyed to a site map.
☒ Maps with project area, APE, and any historic properties marked and identified.	☒ For new construction, rehabilitations, etc., attach work plans, drawings, etc.
☒ Other supporting documents (if necessary to explain the project).	☒ Description of present use and condition of the project area.

*A note about photographs: Digital photos must be current, high resolution, and adequately show the resource. Take photographs of the overall property and the exterior of each building on the property, including outbuildings. Include views of the overall setting, views of the building in its immediate surrounding showing the relationship of the building to neighboring buildings, and views of significant landscape features (i.e. tree lined approaches, stone walls, formal gardens, etc.). Exterior views of the building should include full views of each side (if possible) and views of important architectural details. Key all photographs to a site map.

If the project involves rehabilitation, include photographs of the building(s) involved and especially the areas of the building slated for rehab work. Label each exterior view to a site map and label all interior views. If the project involves new construction, include photographs of the surrounding area looking out from the project site. Include photographs of any buildings that are located on the project property or on adjoining property.

NOTE: Section 106 regulations provide for a 30-day response time by the Alabama SHPO from the date of receipt. Project activities may not begin until our office has reviewed this information and issued comments.

Upon receipt, applications and attachments become the property of the State of Alabama.

For questions regarding this form or the Section 106 Review Process, contact Amanda McBride, Section 106 Coordinator, at 334.230.2692 or Amanda.McBride@ahc.alabama.gov.

All projects must be submitted digitally

E-mail this form and supporting documents to Section.106@ahc.alabama.gov This is the only approved e-mail address for project submission. Projects sent to any other e-mail address will not be accepted. The attachment size cannot exceed 19 MB. Alternatively, you may submit projects with larger attachments through an online system to be determined by the AHC.

Please limit your submission to cultural resources information only.

Contact Amanda McBride for any questions on digital submissions

PHOTO 1



PHOTO 2



PHOTO 3



PHOTO 4



PHOTO 5



July 31, 2026

Mr. Jared D. Kelly, Chief
Solid Waste Engineering Section
Land Division
1400 Coliseum Boulevard
Montgomery, AL 36130-1463

**Re: Wilcox County Landfill
Permit No. 66-03
Response to Permit Renewal Comment Letter dated 10/9/2025**

Dear Mr. Kelly:

We offer the following italicized responses to your "Comments on Permit Renewal and Modification Letter" dated October 9, 2025:

- The Permittee must revise the Application to include the updated Application Form 439 found on the ADEM website, in accordance with ADEM Admin. Code 335-13-5-.06.
We have completed the corrected form via web portal.
- The waste stream description on Form 305 in the current Application does not match the previously approved waste stream description in the permit. The Permittee must match the waste stream description on Form 439 and in the Plan of Operation with what is stated in the permit, unless the waste stream description is updated as part of the permit minor modification in accordance with ADEM Admin. Code 335-13-5-.06(2)(b)(l.).
We have corrected the wording for the waste stream description.
- The Permittee must submit the applicable fee of \$1,460.00 for a minor modification for a C/D Landfill permit. The applicable fee is listed in Fee Schedule E of ADEM Admin. Code 335-1-6-.07.
Application fee will be submitted once billed via web portal
- The Permittee must revise the Application to include a list of updated addresses for landowners adjacent to the facility, as indicated on county tax records, per ADEM Admin. Code 335-13-5-.03(1)(b)5.
A list of Updated landowners has been attached.
- The Application must be revised to include statements signed by a professional engineer AND a representative of the facility owner/operator certifying that the information being submitted in the application is accurate and correct, in accordance with ADEM Admin. Code 335-13-5-.02(1)(d).
Verification letter has been uploaded with Engineer Signature.
- The Permittee should contact the Alabama Ecological Services Field Office to determine if there were any changes to the threatened and endangered species list status of the Gopher Tortoise, according to the letter from the United States Department of the Interior Fish and Wildlife Service found in the GWMP.



PORTER-HIGGINBOTHAM ENGINEERING, INC.

The Permittee must then include an updated letter in the Application that states the facility will not jeopardize the continued existence of the Gopher Tortoise and any other endangered or threatened species under the Endangered Species Act of 1973, in accordance with ADEM Admin. Code 335-13-4-.01(l)(b)l.

A letter has been uploaded stating we will not jeopardize any Endangered species and a letter from the USFWS stating the endangered species has been attached.

- The Permittee must submit written certification from a State Historic Preservation Officer demonstrating that the facility is not located on a site that is archaeologically or historically sensitive as determined by the Alabama Historical Commission, in accordance with ADEM Admin. Code 335-13-4-.01(l)(e).
We have submitted a project review consultation form to AHC but have not received a response. The deadline for AHC's response is 8/28/26. We will upload their response to web portal as soon as it is received.
- In accordance with ADEM Admin. Code 335-13-5-.02(2)(a)(2.) (i), the Permittee must provide the cell certification and subsequent approval letter from ADEM for the current cell waste is being disposed in. Letters dated July 21, 2022 and May 18, 2023 were sent requesting this information.
Currently waste is outside of Cell 2 boundary so cell certification letter cannot be sent. Wilcox County is proposing a solution to the problem under "Engineering Plans" in the Plan Operation attached. If this is approved and implemented, we will send a cell certification letter.
- The Permittee must provide proof that the bottom elevation of all cells is at least 5 feet above the highest measured groundwater level, in accordance with ADEM Admin. Code 335-13-4-.12(2)(a).
The current cell in use is not a trench layout, and all rubbish is above-ground. Is this still required?
- The Permittee must add phrasing to the Plan of Operation that states the facility has sufficient control points for accurate horizontal and vertical control for facility construction, operation and closure and post-closure, in accordance with ADEM Admin. Code 335-13-4-.12(2)(a).
See "Control Points" section added to Plan of Operations
- The Permittee must submit an initial topographical map at contour intervals of five feet as part of the Plan of Operation, in accordance with ADEM Admin. Code 335-13-4-.12(2)(a).
Topo Map Submitted
- The boundary plat is not stamped with seal of the land surveyor and does not contain a legal property description. The Permittee must submit a new boundary plat and legal property description prepared, signed, and sealed by a land surveyor of the proposed boundary of the facility and disposal area, in accordance with ADEM Admin. Code 335-13-4-.12(2)(c).
Legal Property Map Submitted. We will have the legal description to you by 8/7/26.
- The existing and proposed surface drainage pattern map, included in the Plan of Operation, does not include a seal or signature and registration number from a professional engineer. The Permittee must submit a new surface drainage pattern map with the seal or signature and registration number from a professional engineer, in accordance with ADEM Admin. Code 335-13-5-.02(1)(a)(5.) (i) and ADEM Admin. Code 335-13-5-.02(2)(a)(2.) (i).
Stamped surface drainage map attached.

TUSCALOOSA LOCATION

2009 PAUL W. BRYANT DRIVE, TUSCALOOSA, AL 35401
OFFICE PHONE: (205) 247-3212

FAYETTE LOCATION

102 TEMPLE AVENUE SOUTH, FAYETTE, AL 35555
OFFICE PHONE: (205) 932-3478

- The map indicating the 100-foot buffer zones around the perimeter of the landfill, included in the Plan of Operation, does not include a seal or signature and registration number from a professional engineer. The Permittee must submit a new map indicating the 100-foot buffer zones around the perimeter of the landfill with the seal or signature and registration number from a professional engineer, in accordance with ADEM Admin. Code 335-13-5-.02(1)(a)(5)(i) and ADEM Admin. Code 335-13-5-.02(2)(a)(2)(i).
Sealed buffer zone map attached.
- The map indicating the disposal areas within the landfill, included in the Plan of Operation, does not include a seal or signature and registration number from a professional engineer. The Permittee must submit a new map indicating the disposal areas within the landfill with the seal or signature and registration number from a professional engineer, in accordance with ADEM Admin. Code 335-13-5-.02(1)(a)(5)(i) and ADEM Admin. Code 335-13-5-.02(2)(a)(2)(i).
Revised Disposal Area Map Attached.
- The "Explosive Gases" section of the Plan of Operation mentions a gas monitoring plan prepared by Ball Engineering, Inc. that was supposed to be included with the Plan of Operation, but it is not present in the Application. The revised GWMP contains a "Hazardous Gas Monitoring" section that provides few details of a proper gas monitoring plan. The Permittee must submit an appropriate Gas Monitoring Plan in accordance with ADEM Admin. Code 335-13-4-.16.
Original Gas Monitoring Plan Attached.
- The Permittee must add language to the Plan of Operation discussing how their environmental monitoring and treatment structures shall be protected and maintained in good repair and easily accessible, in accordance with ADEM Admin. Code 335-13-4-.23(2)(e).
This will be corrected by 8/7/26
- The Permittee must add language to the Plan of Operation discussing how records are maintained on daily volume of waste received and a quarterly report summarizing daily volumes should be submitted to the Department, in accordance with ADEM Admin. Code 335-13-4-.23(2)(f).
This will be corrected by 8/7/26
- The Closure Plan must be updated to include the final elevations and cross-sections for the cap, in accordance with ADEM Admin. Code 335-13-5-.20(2)(a)l.
This will be corrected by 8/7/26.
- The Permittee must submit a hydrogeological evaluation report provided by a firm or individual, outside of ADEM, having expertise in hydrogeology and containing all information required by ADEM Admin. Code 335-13-4-.13(2)(a)l.
This will be corrected by 8/15/26.
- The Permittee must provide a description of the uppermost aquifer in the GWMP, in accordance with ADEM Admin. Code 335-13-4-.13(2)(a)l.
This will be corrected by 8/15/26.
- The Permittee must remove Section 4.4.4 Assessment of Spatial Variation from the GWMP.
This will be corrected by 8/15/26.

- The Permittee must update GWMP by including MW-IN(a) in the groundwater monitoring well network and updating Sections 1.4.8 and 1.4.9 to reflect this change, in accordance with ADEM Admin. Code 335-13-5-.06(2)(a)4.
This will be corrected by 8/15/26.
- The Permittee must discuss the site-wide false positive rate (SWFPR) and statistical power of any tests mentioned in the GWMP that will be used for the statistical evaluation of the monitoring data in accordance with the 2009 edition of the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance.
This will be corrected by 8/15/26.
- Based on the groundwater flow shown in the Potentiometric Map, MW-4 would not function as a good downgradient well for the closed MSW trench. The Department recommends the Permittee convert MW-4 to a second background well.
This will be corrected by 8/15/26.
- Based on the groundwater flow shown in the Potentiometric Map, the Department recommends the Permittee install a new downgradient well between MW-2 and MW-3 in the bottom right corner of the disposal area to properly monitor the closed MSW trench.
This will be corrected by 8/15/26.
- The Permittee must provide the boring logs for MW-IN(a), MW-2, MW-3, and MW-4 in Appendix C of the GWMP, in accordance with ADEM Admin. Code 335-13-5-.02(2)(a)(2)(i).
This will be corrected by 8/15/26.
- The Permittee must provide a table of historical groundwater elevation data in the G WMP, in accordance with ADEM Admin. Code 335-13-4-.11 (2)(a).
This will be corrected by 8/15/26.

Sincerely,

Luke Porter

Luke Porter, P.E.
Principal Porter-Higginbotham Engineering, Inc.

PLAN OF OPERATION
FOR
WILCOX COUNTY CONSTRUCTION AND DEMOLITION LANDFILL

SITE LOCATION

The site of the Construction and Demolition (C and D) Landfill is a 18.61 acre parcel of land owned by Wilcox County. The site is centrally located in the County approximately two miles northeast of the downtown area of Camden on the east side of Alabama Highway No. 41. It is located in the east half (E ½) of the Southeast Quarter (SE ¼), Section 15, Township 12 North, Range 8 East, Wilcox County, Alabama.

At the opening of the facility, the facility was utilized as a municipal and county wide sanitary landfill, which was serving Camden and the residents of Wilcox County. Presently, the facility has closed Trench No. I and moved forward as purely as a Construction and Demolition landfill serving Camden and the residents of Wilcox County. No hazardous waste are to be handled at this landfill site. The attendant will be instructed to verify that no refuse considered hazardous be included in the waste accepted. No municipal or sanitary waste will be accepted. If there are questionable wastes, the attendant should notify his supervisor for instructions.

The initial construction of Trench No. I has been made and made ready for use and been approved by ADEM, during the Summer of 1990. Since then, Trench No. I has been closed out, and the facility has transitioned from a Trench layout to a cell layout. Cell No. 2 has been approved by ADEM and has been utilized since the closing of Trench No. I. The initial construction of Cell No. 3 is anticipated to be made and made ready for use, subject to the approval of ADEM, during the Fall or Winter of 2026. It is anticipated that this cell will be used for ten or more years and then closed out. A 100 foot wide buffer zone from the edge of the permitted boundary has been reserved as required by ADEM.

The surface topography consists of a ridge beginning at the highway northeast of the entrance road sloping and running southeast through the middle of the site. The surface drainage is split by the gravel road which runs generally along this ridge line. This road runs to the east line of the landfill property to provide

access into the adjoining properties. A locked gate will be maintained at this exit with only the adjacent property owners having access. Drainage is generally to the southeast to sediment ponds, thence to a tributary of Pursley Creek which is a tributary of the Alabama River. The site has previously been used as timberland. Trees will be preserved along the tributary of Lottie's Creek which flows across a northeastern corner of the site. This site is not a part of any designated flood-plain area. Also, the landfill will not contribute to the taking of any endangered or threatened species of plants, fish or wildlife nor adversely modify their critical habitat.

The development of the construction and demolition landfills and the completed final surfaces will generally conform to the existing slopes, which run to the southwest and east from a ridge which itself slopes to the southeast portion of the site. These slopes average about a ten percent grade. The design, construction, operation and close-out of the site will incorporate good environmental practices to protect surface and subsurface quality. Surface water diversions such as ditches, dikes, terraces, and piping will channel surface runoff between the cells to sedimentation ponds near the southeast corner of the property to allow for settling of excessive silt and suspended solids caused by the construction operations. The cells will have a large sedimentation pond capable of withstanding flow from all the cells.

This creek or natural drainage way carrying runoff from the north through the east side of the property will be maintained.

The geohydrological evaluation of the site was performed by geotechnical consultants to establish the site geology and hydrogeology. Copies of these reports are included and are on file with ADEM. Based on this subsurface data obtained on February 4, 1988, it was determined that a synthetic liner would not be required. By using data from these reports and groundwater readings from the monitoring wells, a finished projected seasonal high-water table was established. This allowed the bottom elevation of the landfill cells to be set at a minimum of five (5) feet above this seasonal high groundwater table. Due to a surficial groundwater condition that is creating a wet weather spring problem in the upper elevation areas, it will be necessary to complete the site preparation grading before excavating the cells. This wet surface condition is caused by the highly permeable surface soils overriding the impervious clays a few feet below the surface. The

site preparation grading will correct this problem by intercepting this moisture before it reaches the cell areas and diverting it into the drainage ditches.

The site is located more than 10,000 feet from any airport, thus avoiding any hazard that might occur from an attraction of birds by putrescible wastes. The daily covering of the waste will minimize the attraction of birds to the site.

The report of subsurface exploration by Quality Assurance Testing Laboratory, which is attached and made a part of this Plan of Operation, explores the possibility of active faults, sink holes and karst terrain. This area is not considered to be an active fault or sinkhole area.

ENGINEERING PLANS

The engineering plans and specifications have been prepared for the Wilcox County Construction and Demolition Landfill and together with this report complete the set of plans by which the landfill will be constructed, operated, maintained, and closed.

The disposal boundary for the Wilcox County Landfill is 9.14 Acres. Currently, Wilcox County has one closed cell and one open cell. The currently operating cell has exceeded its max capacity, prompting Wilcox County to request the opening of a third cell. A surveyor has recently surveyed the permitted area and labeled the disposal boundary. With this information, it was noted that the pond collecting for cell 2 was partially located inside of the disposal boundary. In order to remedy the violations presented to the County by ADEM, the Wilcox County Landfill plans to do the following upon approval from ADEM.

- Remove material from Cell 2 and place the material in such a way to more efficiently utilize the airspace between Cell 1 and Cell 2. This will involve the removal of the access road between Cells 1 and 2. The removed material from Cell 2 will be placed all the way to the Toe of Slope of Cell 1.
- Relocate the pond located outside the disposal area. This will involve filling in the existing pond.
- The creation of one very large pond, capable of handling the drainage from Cell 2 and the proposed Cell 3. (Calculations provided at the end of the document)

- Clearing and Grubbing in order to clear the area of the proposed Cell 3. This will help maximize the airspace and allow Cell 3 to operate for years to come. All work will be done by Wilcox County forces.

COVER

During the initial excavation of the cells, soils will be separated according to their suitability for daily or final cover. A sufficient quantity of clay type soils will be saved for the construction of an eighteen-inch-thick final cover seal. An additional six inches of topsoil will be added for the establishment of a vegetative cover.

EXPLOSIVE GASES

Trench No. 1 contains solid waste and the decomposition of organic materials in solid wastes results in the production of potentially hazardous gases within and outside the site. A Gas Monitoring Plan for this trench, which completely addresses this problem, has been prepared by Ball Engineering, Inc. and is incorporated into this report. No structures are to be built on any of the trench fill areas on this site.

DRAINAGE

Stormwater runoff from the site will be routed so as not to pass over or through a disposal site. Offsite drainage for the north will continue to flow through the site by way of the creek bed. This creek channel will remain unaltered unless it becomes necessary to stabilize the banks due to erosion problems. Surface drainage outside of the cells within the site will be routed, as shown on the plans, through sedimentation ponds before being discharged into the creek. Periodically, the sediments from all the ponds will have to be removed. After drying, these sediments can then be mixed with other good material for use as daily cover material.

An effort should be made to quickly establish a vegetative cover so as to reduce the amounts of sediments.

ACCESS

Access to the landfill site will be from the northwest off Alabama Highway No. 41 along an existing woods road which will be widened and improved. This access road, which will extend through to the eastern boundary of the site, will be a 20-foot-wide all-weather gravel surfaced roadway as will the roadway to the working areas of the landfill. An entrance gate will be installed across the access road as shown on the plans approximately 600 feet from the highway with an exit gate located on the eastern boundary of the site. This exit gate will be kept locked except when adjoining property owners require passage. The boundary of the landfill site adjacent to areas of access is to be fenced with a 5-foot-high net wire and barbed wire fence. The 16-foot-wide entrance will be gated with two 8-foot-wide metal gates. The entrance will be monitored during operating hours by landfill personnel and kept locked when the landfill is closed.

REQUIREMENTS FOR OPERATION

The Wilcox County Construction and Demolition Landfill is presently providing service to the City of Camden and the residents of Wilcox County. The towns of Pine Hill and Pine Apple dispose of their waste in landfills outside of the County. No garbage and waste considered hazardous are to be accepted under any circumstances. The amount of refuse being handled is estimated to average approximately 15 cubic yards per day of uncompacted refuse. No large volumetric changes are anticipated.

The landfill is operated 4 days per week, being closed on Fridays, Saturdays, Sundays, and Holidays.

Records are kept by the operating personnel at the present landfill as to the number of cubic yards of waste per day that are delivered. It is from this data that the estimate of the amount of refuse being handled has been calculated. Scales are not installed at the old landfill and are not currently installed at the current landfill, however; Wilcox County is researching the benefit of installing scales at the present landfill and may do so in the future. Small loads, brought in by individuals, are monitored by landfill personnel.

WORKING FACE PRACTICES

The working face in the cell should be maintained on a slope of 4 horizontal to 1 vertical with the length along the slope being 30 feet. The width of the working face should be kept as narrow as practical, approximately 15 feet, to minimize the amount of cover material needed and to expose less refuse to be blown about.

Refuse should be spread and compacted on the sloped working face in layers 2 feet thick or less.

Compaction should follow immediately behind the spreading with from two to five passes of the compaction equipment. Succeeding layers should be spread and compacted with the final depth of refuse being no more than 8 feet deep before applying a 6-inch-thick cover of compacted soil. With the quantities of refuse being handled in Wilcox County, this compacted depth of refuse usually works out to be approximately 4 feet deep. Each day's refuse should be completely covered with 6 inches of compacted material. Cover material should be kept in a position ready for use, especially during wet weather. Most materials excavated from the cells will be suitable for this daily cover, unless work is being done in a completed section of the cell. The first 18 inches of cover in a completed area should be made of moderately plastic clayey soils to seal the trench. The final 6 inches of the 24 inches of final cover should be fertile top-soil type material capable of supporting vegetative growth. Grass should be planted and maintained as soon as the final cover is completed in order to prevent erosion.

Where operating areas will not have additional refuse placed on them for 3 months or more, a

compacted cover 12 inches thick should be made.

Large metal items of trash such as appliances will now be collected and hauled to a recycling center. All special items of waste shall meet the requirements for disposal as outlined in the ADEM manual "Land Division-Solid waste Program, Division 13" dated July 21, 1988.

Rainwater should be kept drained away from the working face and diverted away from entering the

open cell. All drainage structures for the landfill are designed using a 25-year 24-hour rainfall. Any temporary diversion ditches or swales should be designed for this intensity of rainfall. Proper disposal of stormwater will make the daily operation of the landfill much easier. Pockets that will trap storm drainage should be avoided.

ENVIRONMENTAL CONSIDERATIONS

Good public relations demand that the landfill site be kept as neat and orderly as possible. The daily covering of the refuse will keep down on the spread of litter. Fencing around the site and the daily picking up of loose litter will keep litter that escapes the daily cover under control. The limited access and supervision by the landfill personnel will control the presence of unauthorized persons. If dead animals must be handled by the landfill, they should be removed from the landfill, as the dead animal cannot be properly disposed of inside the landfill. If fire breaks out in the trench, the area of fire should be separated from the other refuse and smothered with moist soil. The open burning of solid waste will not be permitted at this landfill unless prior approval of ADEM is received and only for and under the following circumstances.

1. Clearing debris at the landfill such as trees and stumps. Burning may occur only after a burn permit is received from the Alabama Forestry Commission.
2. The emergency cleanup of debris resulting from catastrophic incidents which leave an unusual large amount of material to be disposed of. Prior approval must be obtained from the Alabama Forestry Commission.

Burning shall not occur over previously filled areas or within 200 feet of existing disposal operations.

WASTE SCREENING PROCEDURES

The waste accepted at the Wilcox County Landfill shall be strictly monitored by Wilcox

County Landfill certified personnel. Only Construction and Demolition waste shall be allowed to be disposed of at the Landfill in accordance with permit number 66-03.

The following plan shall be implemented by the Wilcox County Landfill Operator to prevent the

disposal of any restricted waste which includes, but is not limited to, the following: paint, oil, solid waste, hazardous waste or medical waste.

1. Landfill personnel will inspect every load as it enters the landfill. The waste cannot and will not be

disposed of until the Landfill operator approves the load.
2. Upon discovering restricted waste, the Landfill Operator will immediately notify the transporter that the waste is not permitted to be disposed of at the Wilcox County Landfill and must immediately be turned around.
3. The Landfill Operator shall notify ADEM's Waste Programs Branch if any restricted waste has been

disposed of.
4. If the waste is questionable, the Landfill Operator must notify ADEM's Waste Programs Branch and ask permission before the questionable waste can be disposed of.
5. Landfill personnel will receive training from the Landfill Operator or solid waste officer's training

programs to be able to detect restricted waste.

SAFETY AND PERSONNEL

All employees at the site should have all the safety equipment required by the Occupational Safety and Health Act and be instructed in its use. A well-stocked first aid kit should be kept at the site and employees trained in first aid techniques should be on the site. Manufacturer's safety precautions for the heavy equipment should be made known to all the employees. Competent employees who are trained in the operation of a landfill and the operation

of the equipment area necessity for the smooth and efficient operation of the facility. The present employees at the facility in use will continue to be used in the new landfill.

EQUIPMENT AND FACILITIES

The primary piece of equipment used in the daily operation of the landfill is a 2020 Thompson Cat Dozier. On occasion a 2004 Daewoo Track hoe is brought in. These additional pieces of equipment are used on an as needed basis from the Wilcox County Highway Department and are available on a few hours' notice should anything break down. Additional equipment such as front-end loaders and backhoes is also available from the Highway Department. In the past the excavation for the trenches was contracted out to private contractors. Any excavation needed for the Opening of Cell 3 will be done by County forces using a track hoe, front end loader, and backhoes. Sandier soils which can be used for daily cover will be separated from the heavier clayey soils which will be used as a final cover. Routine preventive maintenance is performed by the landfill personnel. Repairs are made by the Wilcox County Highway Department Shop personnel either on the site or at the County Shop.

ROADWAYS AND WET WEATHER OPERATIONS

A 20-foot-wide all-weather road will be provided across the upper end of all the cells to provide easy access during periods of wet weather. When it is anticipated that the working face will be a considerable distance from this all-weather road during a period of wet weather, an all-weather road will be constructed to the working face. Dry soil should be stockpiled and protected for use during wet periods. Improper and inadequate preparation for the wet period can completely bog down the landfill operation.

ACCESS AND SECURITY

As stated before, access to the landfill is from the northwest from Alabama Highway No. 41. The entrance gate and 5-foot-high net and barbed wire security fence are located approximately 600 feet from the Highway. However, a barrier which will be kept closed and locked on the entrance road at a point near the Highway when the landfill is closed. An

identification sign listing the name of the facility, name of the operating agency, times of operation and types of wastes accepted will also be located at this barrier.

MONITORING

Monitoring of the groundwater will be accomplished by the analysis of samples taken from one upgradient and three downgradient monitoring wells. These samples will be taken and analyzed by qualified laboratory personnel as per schedules required by ADEM. Gas monitoring will be done according to the Gas Monitoring Plan prepared by the firm conducting the monitoring.

CONTROL POINTS

Control Points have been put in place to ensure that the facility has sufficient measures to ensure accurate horizontal and vertical control for facility construction, operation and closure and post closure in accordance with ADEM Code 335-13-4-.12(2)(a).

CLOSURE

Closure of a cell of the landfill or the final closing of the entire landfill should be covered with at least two feet of compacted earth on the top and exposed sides. Eighteen inches of the cover is to be of clay type soil to form a cover seal. The final six-inch cover is to be topsoil seeded to grass and planted in trees to prevent water and wind erosion. The final grade should not be more than 25 percent nor less than 5 percent. Slopes should be graded so that surface water does not pond over the disposal site. Slopes longer than 25 feet shall require horizontal terraces of sufficient width for equipment operation. Within 60 days of the completion of the final grading, a vegetative cover shall be established to minimize erosion. Appropriate species of grass seed, fertilizer and mulch shall be placed to establish this cover. Watering and other maintenance necessary for the germination and establishment of the cover shall be done. A stockpile of topsoil shall be left at the site after completion to assist in repair of eroded or settled areas. After closure, regular scheduled inspections shall be made by Wilcox County personnel of the site, and the monitoring devices and pollution control equipment shall

be maintained according to the requirements and regulations of ADEM.

When the site is closed, the users should be given advance notification and an alternate site designated. The site should be closed off to be inaccessible and then posted to prohibit further dumping. Directions to the alternate site should also be posted.

Landfill personnel should keep a detailed description of the locations of the general types and location of the wastes, the depth over them and other information that may be needed for future use.

No later than 90 days after the final closure of the landfill, an engineer or land surveyor shall prepare a plat and submit it for recording in the Wilcox County Probate Office. This plat shall show the location and dimensions of the landfill cells and other pertinent features of the landfill with respect to the permanently established property and landline corners as required in the Solid Waste Management Regulations Section 4-169.04.

It is anticipated that the completed landfill site will be returned to timberland. It is recommended that permanent buildings or residences should not be constructed over the fill site.

Groundwater monitoring will be continued for at least thirty (30) years after the closing of the site. For a minimum of thirty (30) years after the closing of the site, the owner will conduct post-closure care in accordance with the Alabama Department of Environmental Management Administrative Code. 335-13-4-.20(3)(a). Groundwater monitoring will be conducted throughout the duration of the post closure period.

SEDIMENT POND CALCULATIONS

AREA= 13.79 ACRES

2.79 ACRES OF SAND

11.0 ACRES OF CLAY

$Q = cIA$

- Using the Rational Method for Runoff Coefficients and determining weighted C-value from Civil Engineering Reference Manual

-Sandy Soil 2% to 7% slope=> $c = 0.15$

-Clay Soil 2% to 7% slope=> $c = 0.22$

Weighted C (preconstruction) = $((0.15 * 2.79) + (0.22 * 11.0)) / 13.79 \Rightarrow C(\text{preconstruction}) = 0.18$

- Area Max Overland Flow Length => $L = 1120$ Feet
- Average Slope= 5.4%
- Average Overland Velocity Using Wooded Zone Storage Yields Velocities
 - o $V = 47 \text{ ft/min}$
 - o $T_c = LN \Rightarrow T_c = 1120 / 47 \text{ ft/min} \Rightarrow T_c = 23.8$ minutes or approximately 24 minutes

Intensity, I, for a 25 year storm with $T_c = 24$ minutes yields an I of 7.8 inches/ hour.

$Q(\text{preconstruction}) cIA \Rightarrow (0.18 * 7.8 * 13.79) \Rightarrow Q(\text{preconstruction}) = 19.36$ cubic feet/second

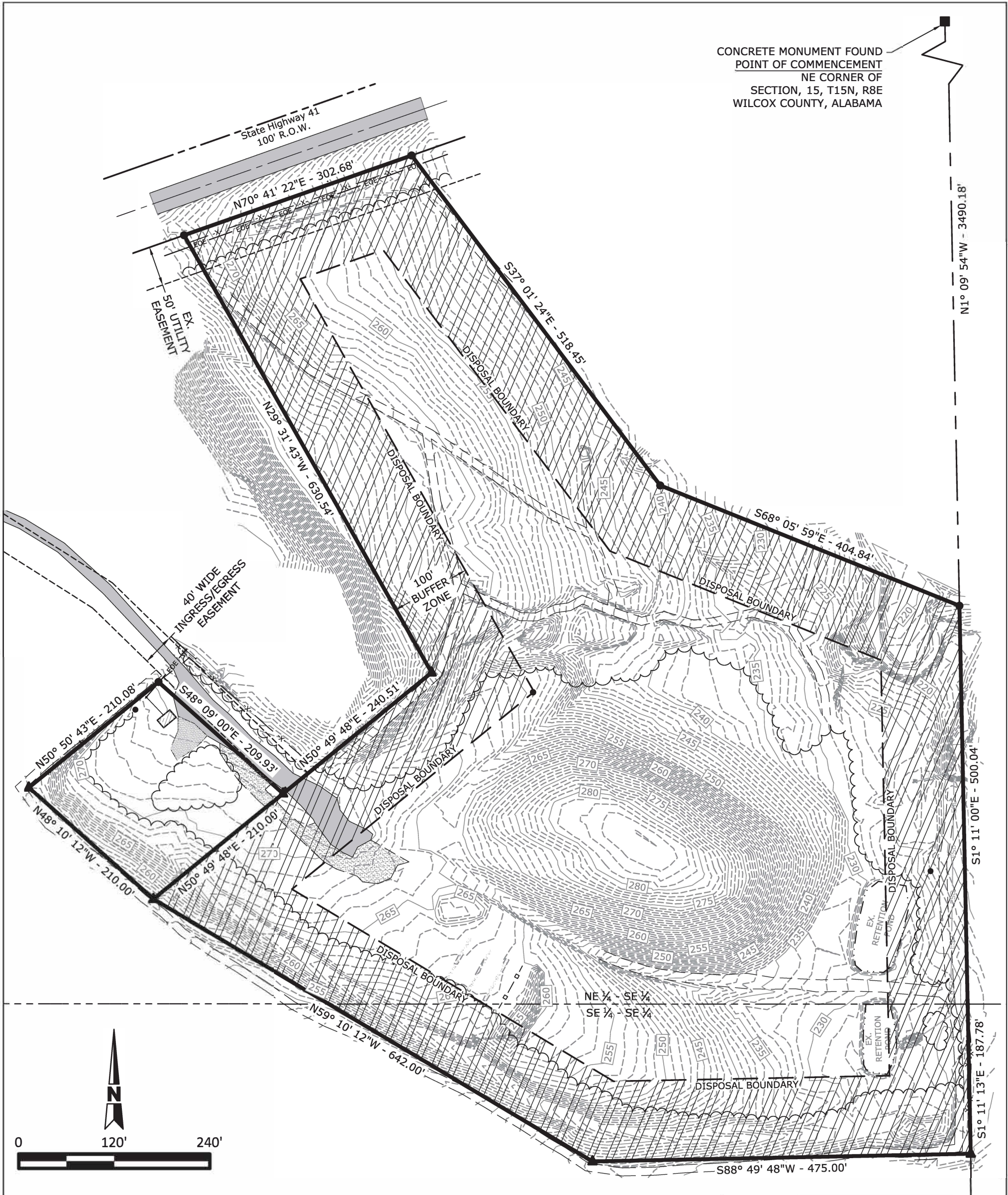
Post Development (Q_{post}) = $(0.27 * 7.8 * 13.79) \Rightarrow Q_{\text{post}} = 29.04$ cubic feet/ second

-Area of Pond 2 Required Volume

With a time of concentration of $T_c = 24$ minutes, for this area for a 25 year, 24 hour storm event and $Q_{\text{post}} = 29.04$ cubic feet/ second, the required volume is

$(29.04 \text{ (cubic ft/sec)} * 60 * 24) \Rightarrow V_{\text{required}} = 41,817.6$ cubic feet

This pond is designed to have a 440 ft x 60 ft base and a 6 foot depth with a 15 inch discharge pipe placed at the 3 foot depth. A pond this size will have a max volume of 158,400 cubic feet, which will be much greater than the required 41,817.6 cubic feet.



CONCRETE MONUMENT FOUND
POINT OF COMMENCEMENT
NE CORNER OF
SECTION, 15, T15N, R8E
WILCOX COUNTY, ALABAMA

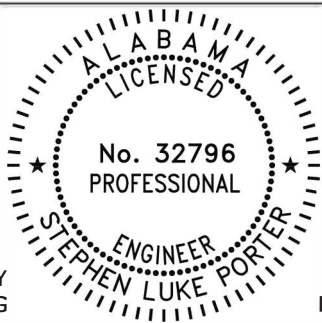
N1° 09' 54"W - 3490.18'

S1° 11' 00"E - 500.04'

S1° 11' 13"E - 187.78'

S88° 49' 48"W - 475.00'

	IRON PIPE / PIN FOUND		EX. BOUNDARY LINE		ESS	EX. SANITARY SEWER MAIN
	CAPPED REBAR FOUND		EX. RIGHT-OF-WAY		EFM	EX. SANITARY SEWER FORCE MAIN
	CONCRETE MONUMENT FOUND		EX. PROPERTY LINE		ESD	EX. STORM DRAIN
	AXLE FOUND		EX. CHAIN LINK FENCE		EWM	EX. WATER MAIN
	CAPPED REBAR SET		EX. IRON FENCE		EGM	EX. GAS MAIN
SEC	SECTION		EX. WIRE FENCE		EO E	EX. OVERHEAD ELECTRICAL
T	TOWNSHIP		EX. WOOD FENCE		EU P	EX. UNDERGROUND ELECTRICAL
R	RANGE		EX. CONTOUR 5' INTERVAL		EU C	EX. UNDERGROUND CABLE TELEVISION
R.O.W.	RIGHT-OF-WAY		EX. CONTOUR 1' INTERVAL		EO T	EX. OVERHEAD TELEPHONE
M.B.L.	MINIMUM BUILDING LINE		EX. CONCRETE PAVEMENT		EU T	EX. UNDERGROUND TELEPHONE
PB.	PLAT BOOK		EX. ASPHALT PAVEMENT			
DB.	DEED BOOK					
PG.	PAGE		EX. GRAVEL DRIVE			
EX.	EXISTING					



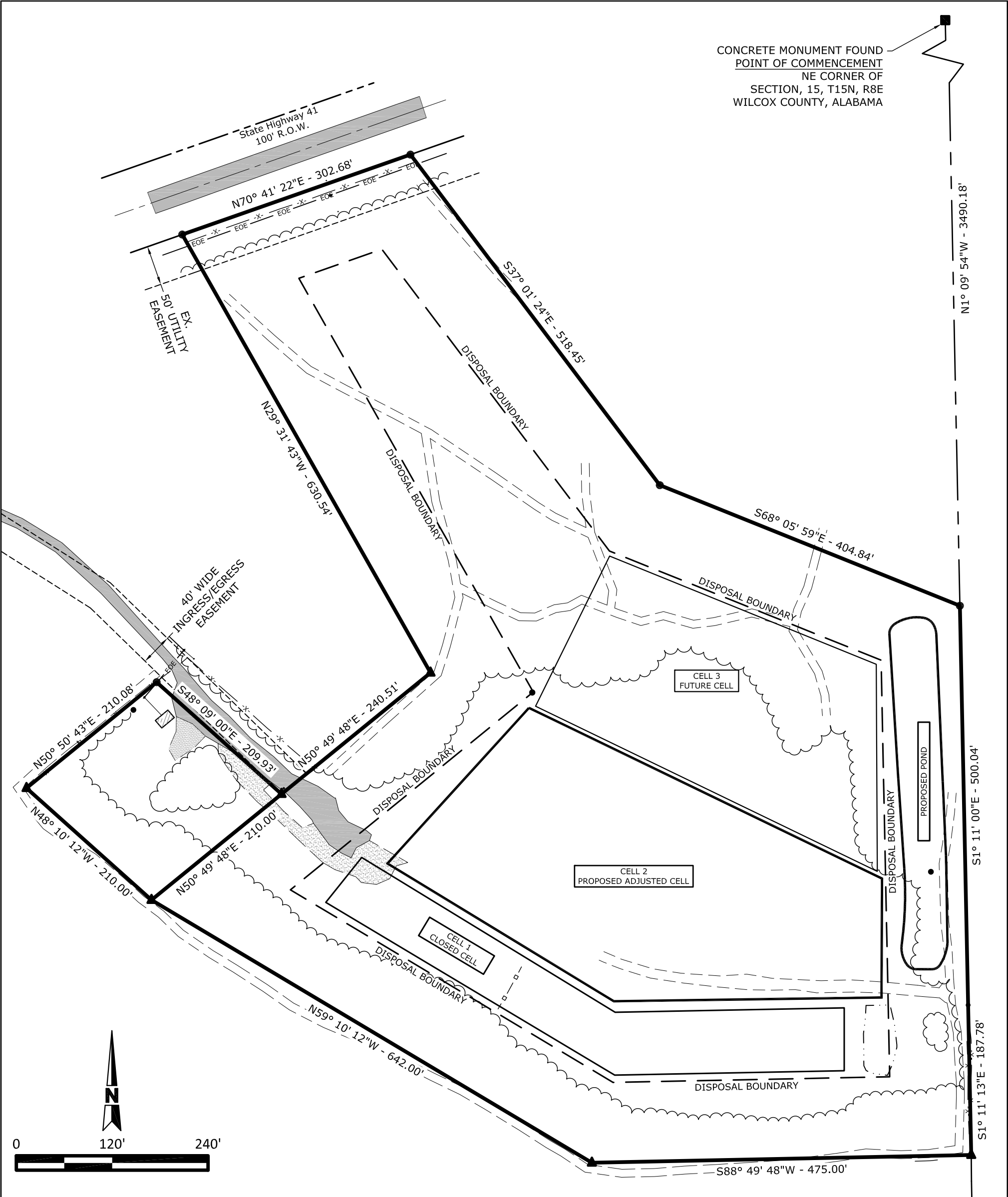
APPROVED BY
PORTER-HIGG

IC.

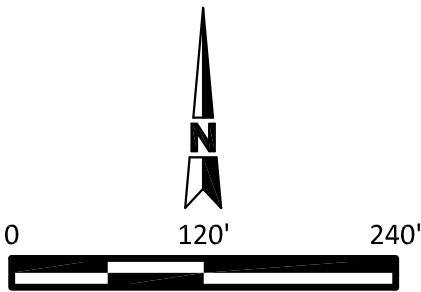
Luke Porter

LUKE PORTER, P.E. AL REGISTRATION NO. 32796

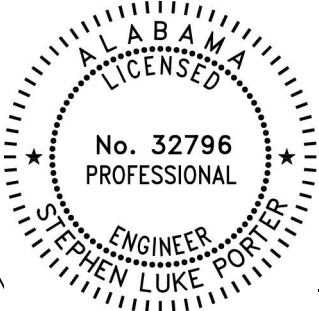
2	WILCOX COUNTY LANDFILL PERMIT RENEWAL WILCOX COUNTY, ALABAMA	TUSCALOOSA 2009 PAUL BRYANT DRIVE TUSCALOOSA, AL 35401 bruce@porterhigginbotham.com Phone:(205)860-5198 (O)	PORTER-HIGGINBOTHAM ENGINEERING, INC.
PHE # 26.012	07/2026 DRAWN BY: JRA	FAYETTE 102 TEMPLE AVENUE SOUTH FAYETTE, AL 35555 luke@porterhigginbotham.com Phone:(205)932-3478 (O)	
DISPOSAL BOUNDARY			



CONCRETE MONUMENT FOUND
POINT OF COMMENCEMENT
NE CORNER OF
SECTION, 15, T15N, R8E
WILCOX COUNTY, ALABAMA

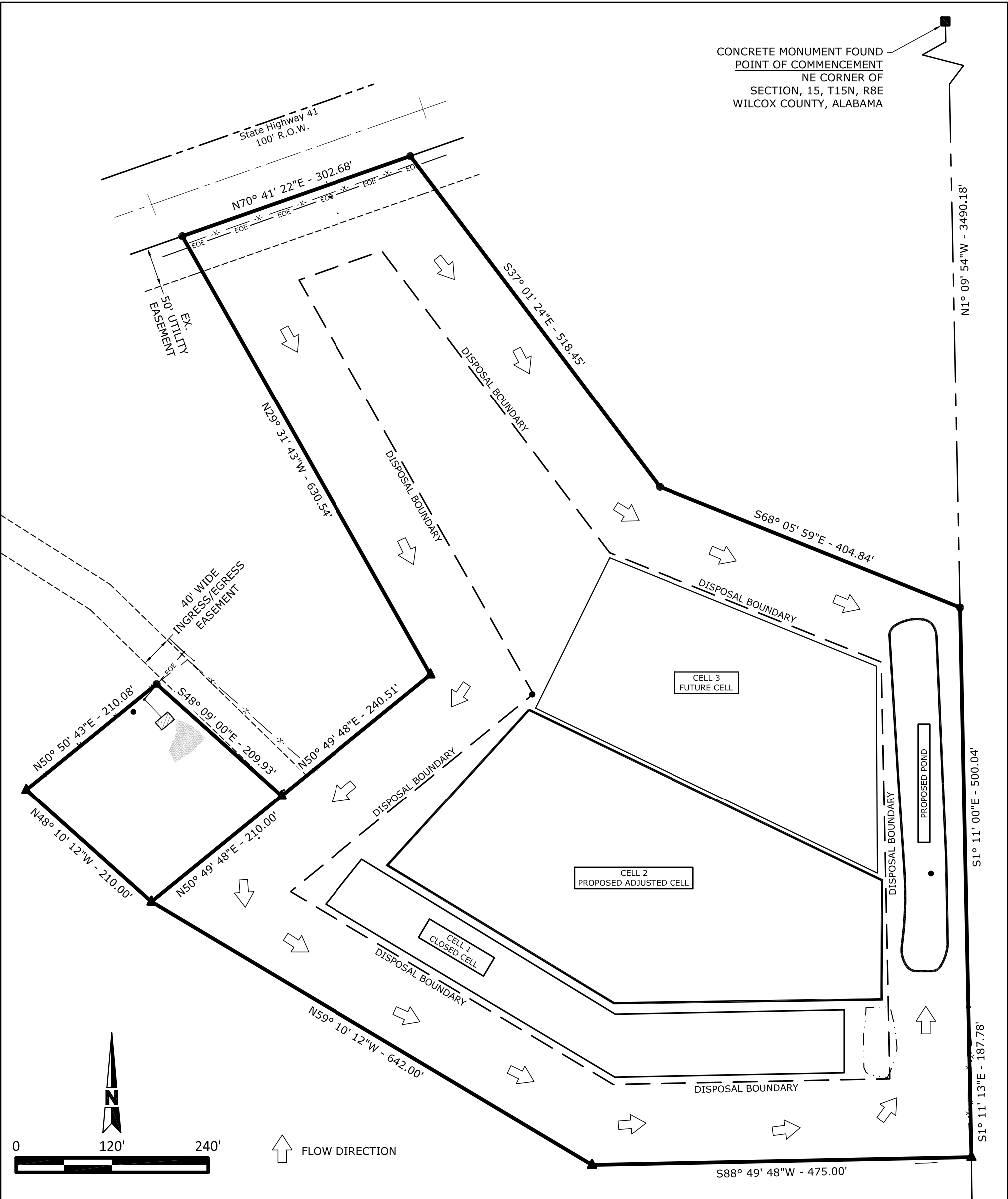


○	IRON PIPE / PIN FOUND	———	EX. BOUNDARY LINE	———	ESS	EX. SANITARY SEWER MAIN
⊙	CAPPED REBAR FOUND	———	EX. RIGHT-OF-WAY	———	EFM	EX. SANITARY SEWER FORCE MAIN
△	CONCRETE MONUMENT FOUND	———	EX. PROPERTY LINE	———	ESD	EX. STORM DRAIN
⬡	AXLE FOUND	———	EX. CHAIN LINK FENCE	———	EWM	EX. WATER MAIN
●	CAPPED REBAR SET	———	EX. IRON FENCE	———	EGM	EX. GAS MAIN
SEC	SECTION	———	EX. WIRE FENCE	———	EOE	EX. OVERHEAD ELECTRICAL
T	TOWNSHIP	———	EX. WOOD FENCE	———	EUP	EX. UNDERGROUND ELECTRICAL
R	RANGE	———	EX. CONTOUR 5' INTERVAL	———	EUC	EX. UNDERGROUND CABLE TELEVISION
R.O.W.	RIGHT-OF-WAY	———	EX. CONTOUR 1' INTERVAL	———	EOT	EX. OVERHEAD TELEPHONE
M.B.L.	MINIMUM BUILDING LINE	———	EX. CONCRETE PAVEMENT	———	EUT	EX. UNDERGROUND TELEPHONE
PB.	PLAT BOOK	———	EX. ASPHALT PAVEMENT			
DB.	DEED BOOK	———	EX. GRAVEL DRIVE			
PG.	PAGE					
EX.	EXISTING					



APPROVED BY:
PORTER-HIGGIN

Stephen L Porter
LUKE PORTER, P.E. AL REGISTRATION NO. 32796



○	IRON PIPE / PIN FOUND	———	EX. BOUNDARY LINE	———	ESS	EX. SANITARY SEWER MAIN
⊙	CAPPED REBAR FOUND	----	EX. RIGHT-OF-WAY	———	EFM	EX. SANITARY SEWER FORCE MAIN
△	CONCRETE MONUMENT FOUND	———	EX. PROPERTY LINE	———	ESD	EX. STORM DRAIN
⬡	AXLE FOUND	———	EX. CHAIN LINK FENCE	———	EWM	EX. WATER MAIN
●	CAPPED REBAR SET	———	EX. IRON FENCE	———	EGM	EX. GAS MAIN
SEC	SECTION	———	EX. WIRE FENCE	———	EOE	EX. OVERHEAD ELECTRICAL
T	TOWNSHIP	———	EX. WOOD FENCE	———	EUP	EX. UNDERGROUND ELECTRICAL
R	RANGE	———	EX. CONTOUR 5' INTERVAL	———	EUC	EX. UNDERGROUND CABLE TELEVISION
R.O.W.	RIGHT-OF-WAY	———	EX. CONTOUR 1' INTERVAL	———	EOT	EX. OVERHEAD TELEPHONE
M.B.L.	MINIMUM BUILDING LINE	———	EX. CONCRETE PAVEMENT	———	EUT	EX. UNDERGROUND TELEPHONE
PB.	PLAT BOOK	———	EX. ASPHALT PAVEMENT			
DB.	DEED BOOK	———	EX. GRAVEL DRIVE			
PG.	PAGE					
EX.	EXISTING					

ALABAMA
LICENSED
No. 32796
PROFESSIONAL
ENGINEER
STEPHEN LUKE PORTER

APPROVED BY:
PORTER-HIGGINBOTHAM ENGINEERING, INC.

Luke Porter
LUKE PORTER, P.E. AL REGISTRATION NO. 32796

	BOUNDARY LINE
	RIGHT-OF-WAY
	QUARTER LINE
	SECTION LINE
	LINE NOT TO SCALE
	WIRE FENCE
	OVERHEAD ELECTRICAL
	UNDERGROUND ELECTRICAL
	EXISTING CONCUR 5' INTERVAL
	EXISTING CONCUR 1' INTERVAL
	EXISTING STORM DRAIN
	EXISTING TRELISE
	EXISTING SIGN
	POWER POLE
	EXISTING GUY ANCHOR
	EXISTING MONITORING WELL
	IRON PIPE FOUND
	CAPPED REBAR FOUND
	5/8" HINDMAN REBAR SET
	CONCRETE MONUMENT FOUND
	WOOD POST FOUND
	CONTROL POINT
ROW*	RIGHT-OF-WAY
PB	PLAT BOOK
DB	DEED BOOK
PG	PAGE

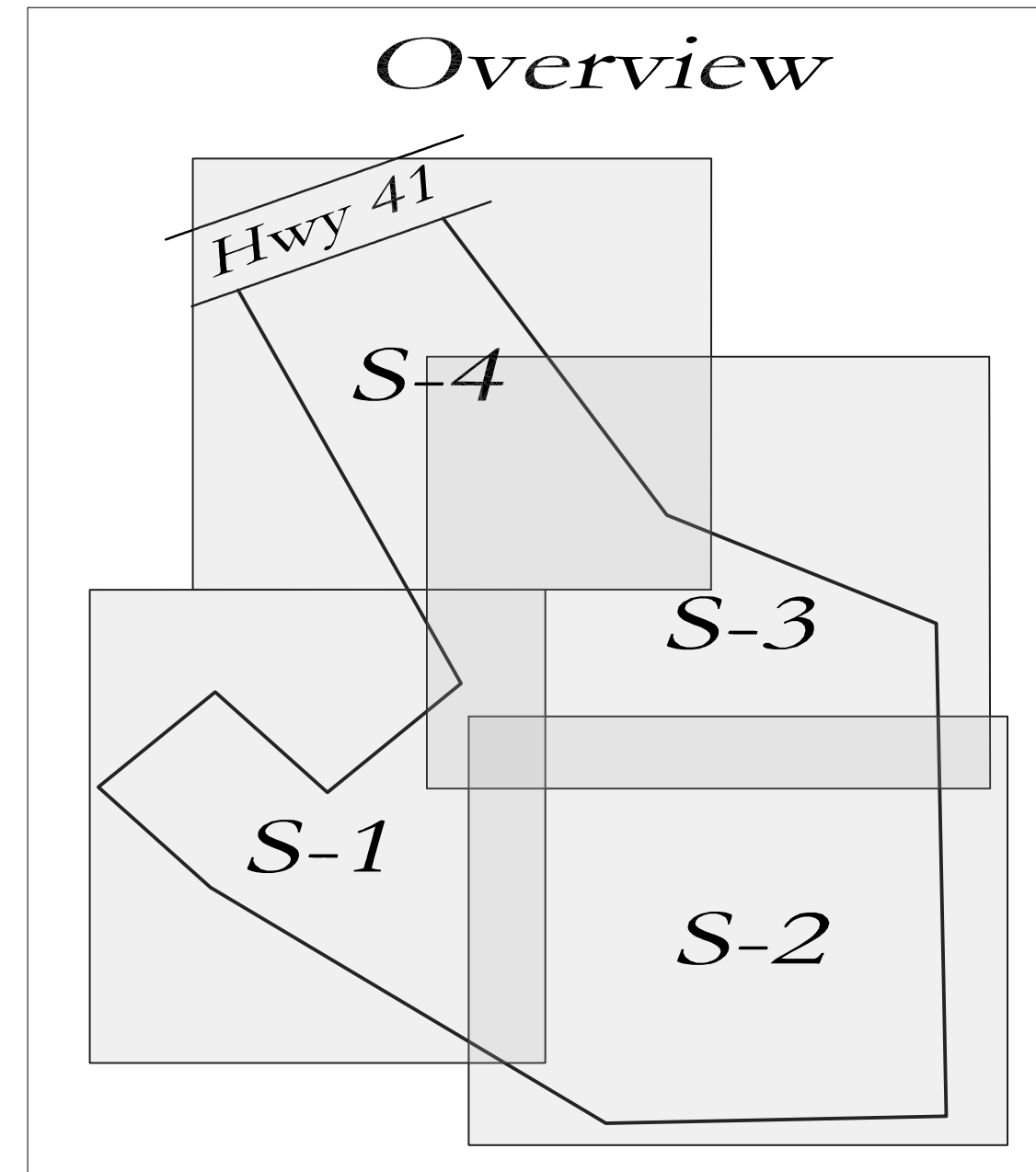
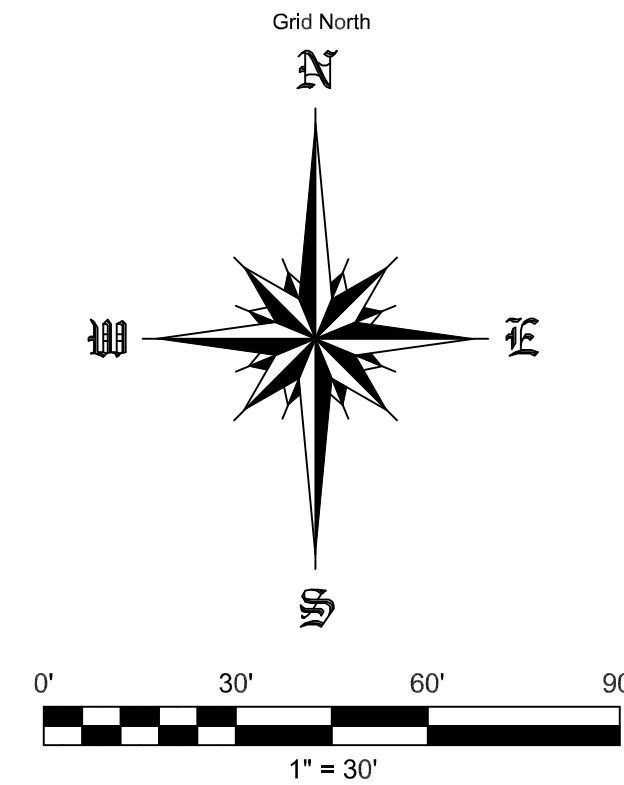
	EXISTING CONCRETE PAVEMENT
	EXISTING ASPHALT PAVEMENT
	EXISTING BUILDING
	EXISTING GRAVEL DRIVE



1. This survey and drawing was completed without benefit of a title search or opinion. Therefore there may be easements and rights-of-ways which are not shown on this drawing.
2. There was no request for or attempt made to locate or show any sub-surface features or utilities, other than visual observations discovered, at the time of this survey.
3. All bearings and coordinates are referenced to Grid North, State Plane Coordinates NAD83 Alabama West Zone 0102, Vertical Datum NAVD 88, using GNSS observations ALDOT CORS Network.
4. Source of Title: Deed Book 8S, Page 506

Point	Northing	Easting	Elevation	Description
1	731384.703	2046058.476	270.83	spike
2	731444.613	2046089.825	272.85	PK
4	731970.739	2045431.088	292.54	PK
5	731915.966	2045385.717	284.00	NAIL

Tax ID# 66-15-05-15-0-000-003.000
Russell Timberlands LLC
Deed Book 11X, Page 386



Surveyor's Signature: Blake Hindman
Blake M. Hindman

Alabama License No. 33668 Date 6/26/2026

Sheet No 1 Of 1

Hindman Surveying, LLC
Professional Land Surveying

P(205) 737-5841
blake@hindmans

15900 Jackson Trace Road
Coker, AL 35452

Topographic & Boundary

Topographic Documentation Survey

Wilcox County Land Fill
1612 AL 41 Camden, AL 36726

Section 15, Township 12 North, Range 8 East
Wilcox County, Alabama

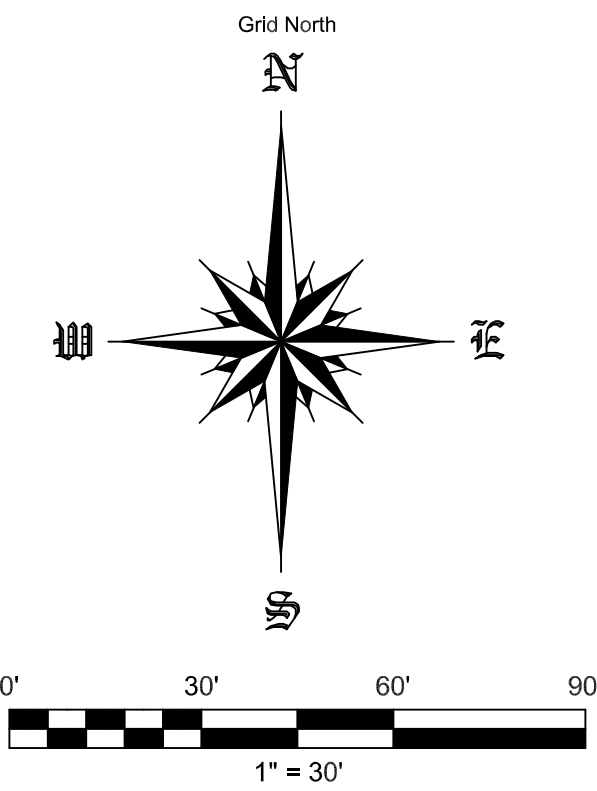
CAD: 26-047 Wilcox Landfill.dwg	Revision
Drawn By: B.M.H.	
Checked By: A.L.W.	
Dates Drawn: 6/23/2026 - 6/25/2026	
Dates Surveyed: 6/22/2026 - 6/22/2026	
Date	



LEGEND

- BOUNDARY LINE
RIGHT-OF-WAY
QUARTER LINE
SECTION LINE
LINE NOT TO SCALE
WIRE FENCE
OVERHEAD ELECTRICAL
UNDERGROUND ELECTRICAL
EXISTING CONTOUR 5' INTERVAL
EXISTING CONTOUR 1' INTERVAL
EXISTING STORM DRAIN
EXISTING TREELINE
EXISTING SIGN
POWER POLE
EXISTING GUY ANCHOR
EXISTING MONITORING WELL
IRON PIPE FOUND
CAPPED REBAR FOUND
5/8" HINDMAN REBAR SET
CONCRETE MONUMENT FOUND
WOOD POST FOUND
CONTROL POINT
RIGHT-OF-WAY
PLAT BOOK
DEED BOOK
PAGE

- EXISTING CONCRETE PAVEMENT
EXISTING ASPHALT PAVEMENT
EXISTING BUILDING
EXISTING GRAVEL DRIVE



S-1

S-3



S-2

Sheet No 2 of 4

Hindman Surveying, LLC
Professional Land Surveying

P(205) 737-5841
blake@hindmansurveying.com

15900 Jackson Trace Road
Coker, AL 35452

Topographic & Boundary
Survey
Wilcox County Land Fill
1612 AL 41 Camden, AL 36726
Section 15, Township 12 North, Range 8 East
Wilcox County, Alabama

Date	Revision
CAD: 26/04/2024	Wilcox Landfill.dwg
Drawn By: B.M.H.	
Checked By: A.L.W.	6/28/2026 - 6/28/2026
Dates Surveyed: 6/22/2026 - 6/22/2026	

General Notes:

- This survey and drawing was completed without benefit of a title search or opinion. Therefore there may be easements and rights-of-ways which are not shown on this drawing.
- There was no request for or attempt made to locate or show any sub-surface features or utilities, other than visual observations discovered, at the time of this survey.
- All bearings and coordinates are referenced to Grid North, State Plane Coordinates NAD83 Alabama West Zone 0102, Vertical Datum NAVD 88, using GNSS observations ALDOT CORS Network.
- Source of Title: Deed Book 8S, Page 506

Site Control

Point	Northing	Easting	Elevation	Description
1	731584.703	2046058.476	270.83	spike
2	731444.613	2046089.825	272.85	PK
4	731970.739	2045431.088	292.54	PK
5	731915.966	2045385.717	284.00	NAIL

I, Blake Matthew Hindman, a Licensed Professional Land Surveyor in the State of Alabama of Hindman Surveying, LLC of Coker, Alabama, hereby certify that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief.

Surveyor's Signature:

Blake M. Hindman

Alabama License No. 33668 Date: 6/28/2026

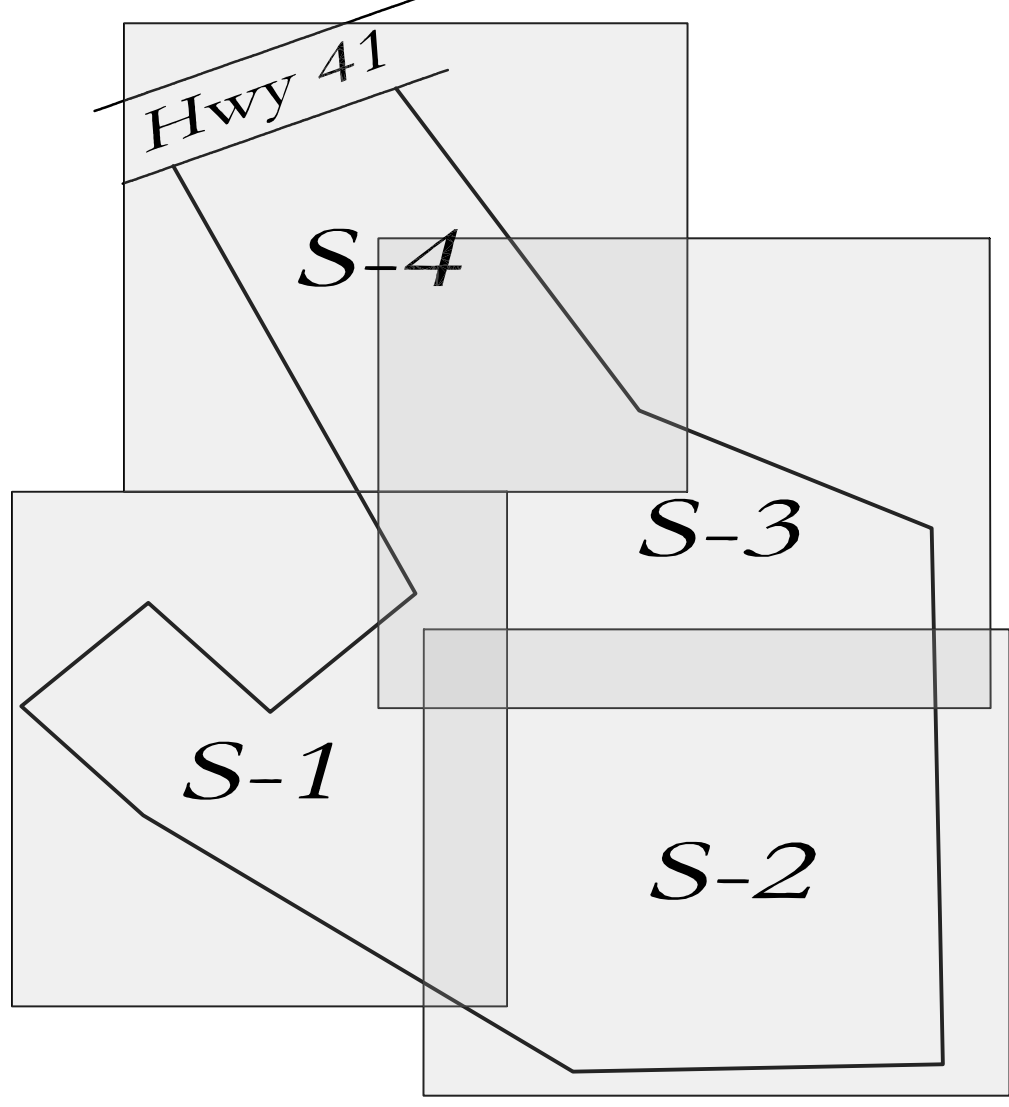


LEGEND

- BOUNDARY LINE
RIGHT-OF-WAY
QUARTER LINE
SECTION LINE
LINE NOT TO SCALE
WIRE FENCE
OVERHEAD ELECTRICAL
UNDERGROUND ELECTRICAL
EXISTING CONTOUR 5' INTERVAL
EXISTING CONTOUR 1' INTERVAL
EXISTING STORM DRAIN
EXISTING TREELINE
EXISTING SIGN
POWER POLE
EXISTING GUY ANCHOR
EXISTING MONITORING WELL
IRON PIPE FOUND
CAPPED REBAR FOUND
5/8" HINDMAN REBAR SET
CONCRETE MONUMENT FOUND
WOOD POST FOUND
CONTROL POINT
ROW
PB
DB
PG

- EXISTING CONCRETE PAVEMENT
EXISTING ASPHALT PAVEMENT
EXISTING BUILDING
EXISTING GRAVEL DRIVE

Overview

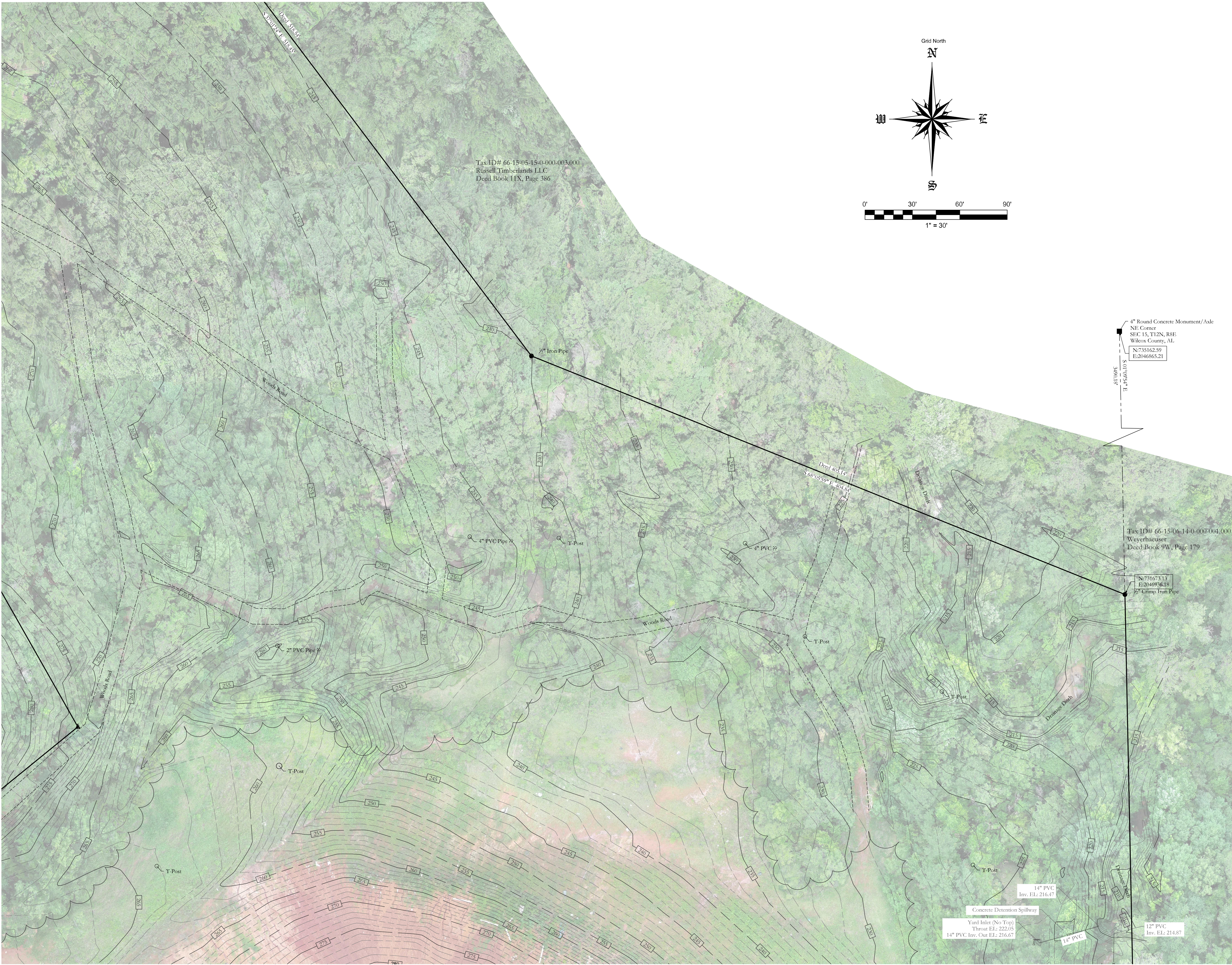


General Notes:

- This survey and drawing was completed without benefit of a title search or opinion. Therefore there may be easements and rights-of-ways which are not shown on this drawing.
- There was no request for or attempt made to locate or show any sub-surface features or utilities, other than visual observations discovered, at the time of this survey.
- All bearings and coordinates are referenced to Grid North, State Plane Coordinates NAD83 Alabama West Zone 0102, Vertical Datum NAVD 88, using GNSS observations AIDOT CORS Network.
- Source of Title: Deed Book 88, Page 506

Site Control

Point	Northing	Easting	Elevation	Description
1	731584.703	2046058.476	270.83	spike
2	731444.613	2046089.825	272.85	PK
4	731970.739	2045431.088	292.54	PK
5	731915.966	2045385.717	284.00	NAIIL



S-2

I, Blake Matthew Hindman, a Licensed Professional Land Surveyor in the State of Alabama of Hindman Surveying, LLC of Coker, Alabama, hereby certify that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief.

Surveyor's Signature:

Blake M. Hindman

Alabama License No. 33668 Date: 6/26/2026

S-3

Sheet No 3 of 4

Hindman Surveying, LLC
Professional Land Surveying

P(205) 737-5841
blake@hindmansurveying.com

15900 Jackson Trace Road
Coker, AL 35452

Topographic & Boundary
Survey
Wilcox County Land Fill
1612 AL 41 Camden, AL 36726
Section 15, Township 12 North, Range 8 East
Wilcox County, Alabama

Revision

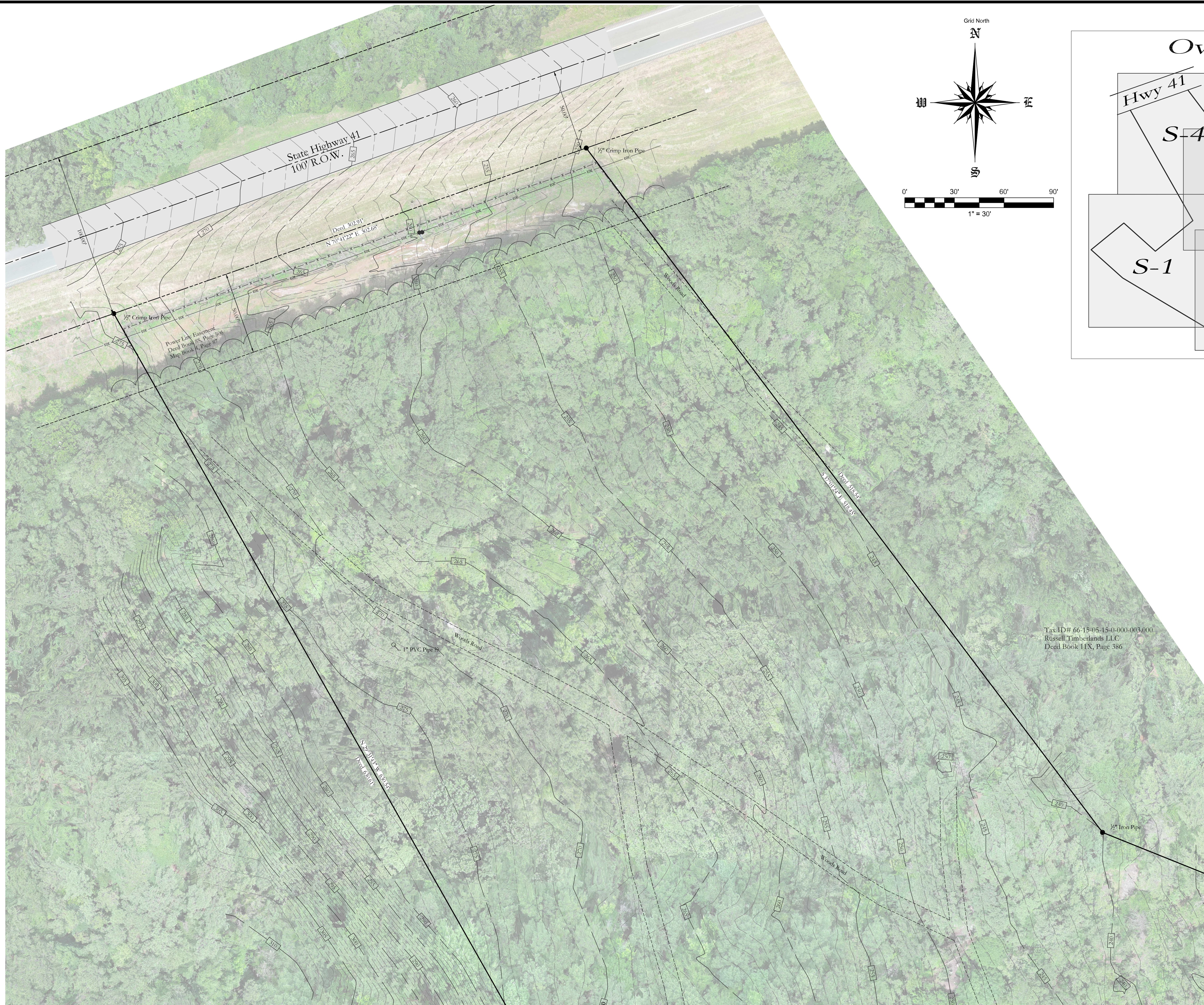
Date

CAD: 20/04/2026 Wilcox Landfill.dwg
Drawn By: B.M.H.
Checked By: A.L.W. 6/23/2026 - 6/25/2026
Dates Surveyed: 6/22/2026 - 6/22/2026



	BOUNDARY LINE
	RIGHT-OF-WAY
	QUARTER LINE
	SECTION LINE
	LINE NOT TO SCALE
	WIRE FENCE
	OVERHEAD ELECTRICAL
	UNDERGROUND ELECTRICAL
	EXISTING CONTOUR 5' INTERVAL
	EXISTING CONTOUR 1' INTERVAL
	EXISTING STORM DRAIN
	EXISTING TREELINE
	EXISTING SIGN
	POWER POLE
	EXISTING GUY ANCHOR
	EXISTING MONITORING WELL
	IRON PIPE FOUND
	CAPPED REBAR FOUND
	5/8" HINDMAN REBAR SET
	CONCRETE MONUMENT FOUND
	WOOD POST FOUND
	CONTROL POINT
	RIGHT-OF-WAY
PI	PLAT BOOK
DB	DEED BOOK
PG	PAGE

	EXISTING CONCRETE PAVEMENT
	EXISTING ASPHALT PAVEMENT
	EXISTING BUILDING
	EXISTING GRAVEL DRIVE



S-1

1. This survey and drawing was completed without benefit of a title search or opinion. Therefore there may be easements and rights-of-ways which are not shown on this drawing.
2. There was no request for or attempt made to locate or show any sub-surface features or utilities, other than visual observations discovered, at the time of this survey.
3. All bearings and coordinates are referenced to Grid North, State Plane Coordinates NAD83 Alabama West Zone 0102, Vertical Datum NAVD 88, using GNSS observations ALDOT CORS Network.
4. Source of Title: Deed Book 8S, Page 506

Point	Northing	Easting	Elevation	Description
1	731384.703	2046058.476	270.83	spike
2	731444.613	2046089.825	272.85	PK
4	731970.739	2045431.088	292.54	PK
5	731915.966	2045385.717	284.00	NAIL

I, Blake Matthew Hindman, a Licensed Professional Land Surveyor in the State of Alabama of Hindman Surveying, LLC of Coker, Alabama, hereby certify that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief.

Surveyor's Signature:

Blake M. Hindman

Alabama License No. 33668 Date 6/26/2026

S-4

Sheet No 4 Of 4

Hindman Surveying, LLC
Professional Land Surveying

P(205) 737-5841
blake@hindmans

15900 Jackson Trace Road
Coker, AL 35452

Topographic & Boundary

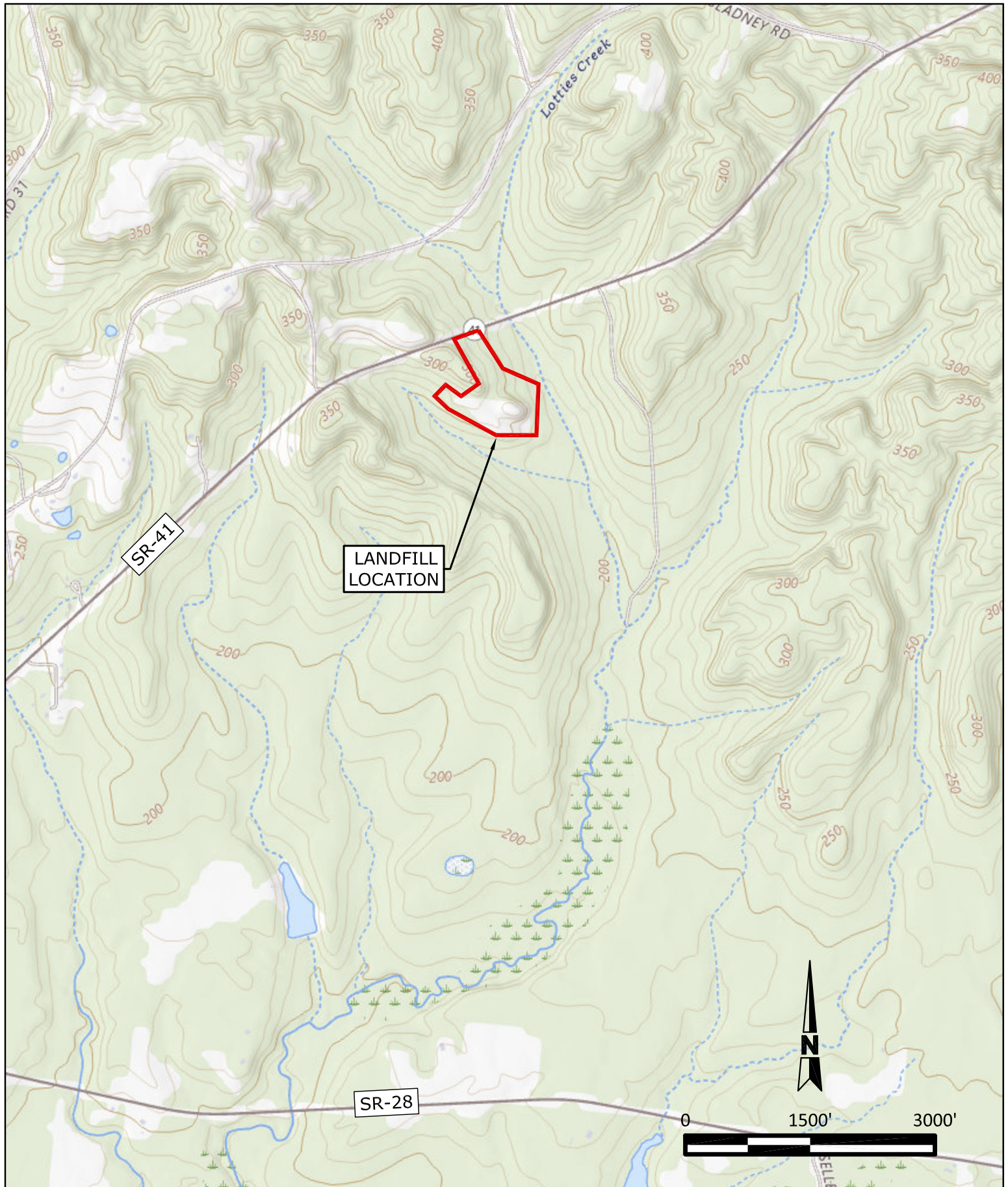
Survey

Wilcox County Land Fill
1612 AL 41 Camden, AL 36726

Section 15, Township 12 North, Range 8 East
Wilcox County, Alabama

Date	Revision
CAD: 26-047 Wilcox Landfill.dwg	
Drawn By: B.M.H.	
Checked By: A.L.W.	
Dates Drawn: 6/23/2026 - 6/25/2026	
Dates Surveyed: 6/22/2026 - 6/22/2026	





1

PHE26.012

SITE LOCATION MAP

WILCOX COUNTY
LANDFILL PERMIT RENEWAL
CAMDEN, ALABAMA

06/2026
DRAWN BY: JRA

TUSCALOOSA
2009 PAUL BRYANT DRIVE
TUSCALOOSA, AL 35401
bruce@porterhigginbotham.com
Phone: (205) 860-5198 (O)

FAYETTE
102 TEMPLE AVENUE SOUTH
FAYETTE, AL 35555
luke@porterhigginbotham.com
Phone: (205) 932-3478 (O)

PHE
PORTER-HIGGINBOTHAM
ENGINEERING, INC.



EXPLOSIVE GAS MONITORING PLAN
FOR THE NEW
WILCOX COUNTY LANDFILL

for the
WILCOX COUNTY COMMISSION
CAMDEN, ALABAMA

Prepared
by

BALL ENGINEERING, INC.
BOX JB
TUSCALOOSA, AL 35486
205-349-4142

March 30, 1989


John Ball, P.E.
#10314

Ball Engineering, Inc.



Wilcox County Sanitary Landfill
Explosive Gas Monitoring Plan
March 30, 1989

EXPLOSIVE GAS MONITORING PLAN
FOR THE NEW
WILCOX COUNTY LANDFILL

1.0 INTRODUCTION

The following explosive gas monitoring plan is proposed for the new Wilcox County Sanitary Landfill to comply with the requirements of the Alabama Department of Environmental Management Administrative Code, Section 13-4--.16.

1.1 Facility Description

The new Wilcox County Sanitary Landfill (ADEM Permit number yet to be assigned) is located approximately two miles northeast of the downtown area along State Highway 41. The facility accepts municipal and household wastes collected in the city for disposal. Figure 1 shows a location map of the facility using a portion of a USGS quadrangle sheet. Figure 2 shows the site with the location of the monitoring wells, the storage building, surface drainage patterns and the disposal cells. The proposed disposal areas are numbered as cells 1 through 5. The low area along the eastern part of the property is not suitable for landfill use.

Surrounding land is primarily undeveloped forest on all sides. The nearest permanent enclosed structure outside the landfill is approximately one-half mile southwest of the entrance to the site along State Highway 41.

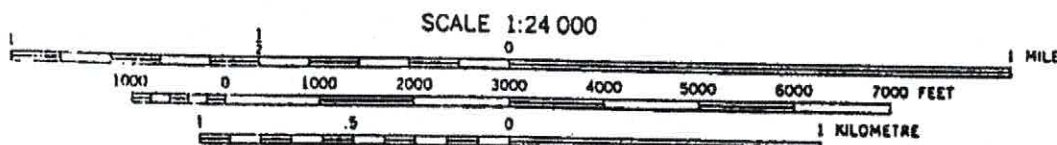
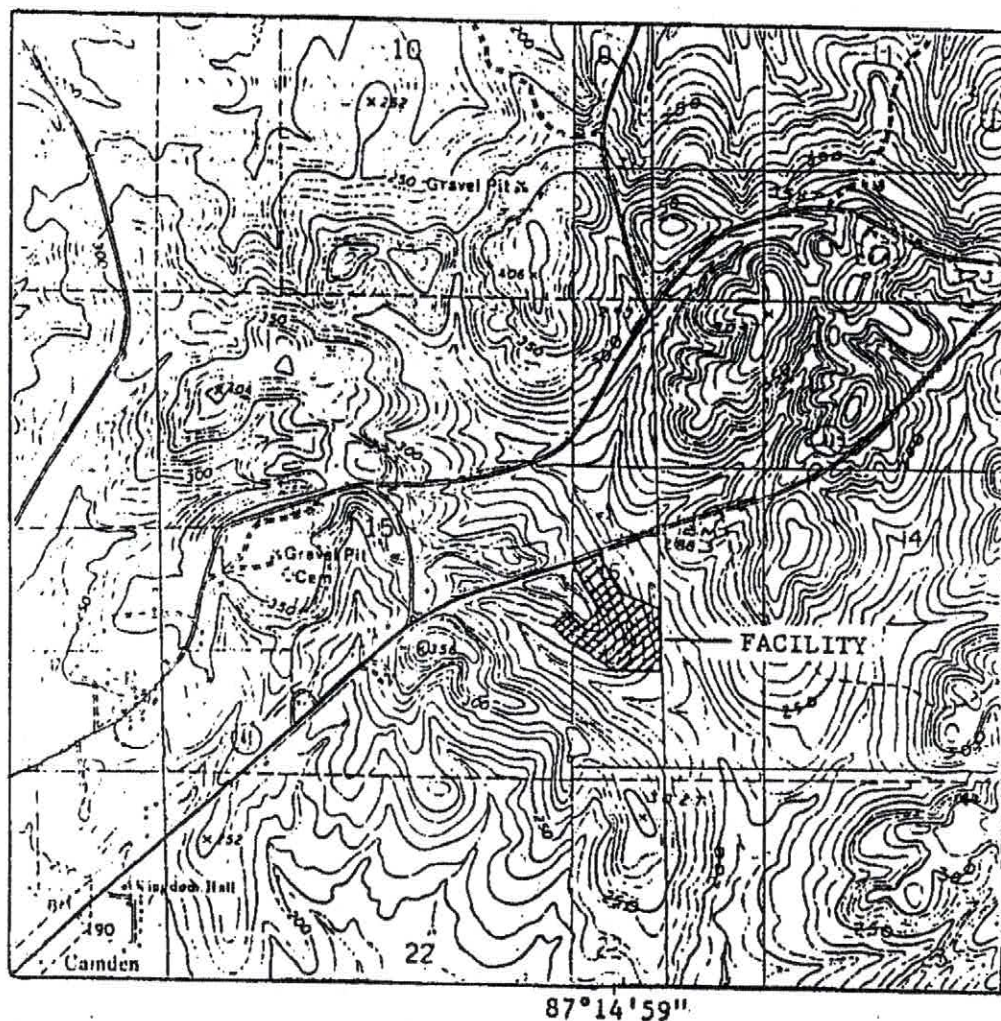
1.2 Site Geology and Hydrogeological Conditions

The major underlying formations are the Porters Creek and Clayton of Tertiary age. The Porters Creek Formation is composed of the upper Matthews Marl Member and a lower unnamed member. The Matthews Marl Member consists of approximately 20

CAMDEN NORTH QUADRANGLE
ALABAMA
7.5 MINUTE SERIES (TOPOGRAPHIC)



TILDEN QUADRANGLE
ALABAMA
7.5 MINUTE SERIES (TOPOGRAPHIC)



CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

FIGURE 1: FACILITY LOCATION MAP
WILCOX COUNTY EAST SANITARY LANDFILL SITE

178' to edge of pond 205 to center

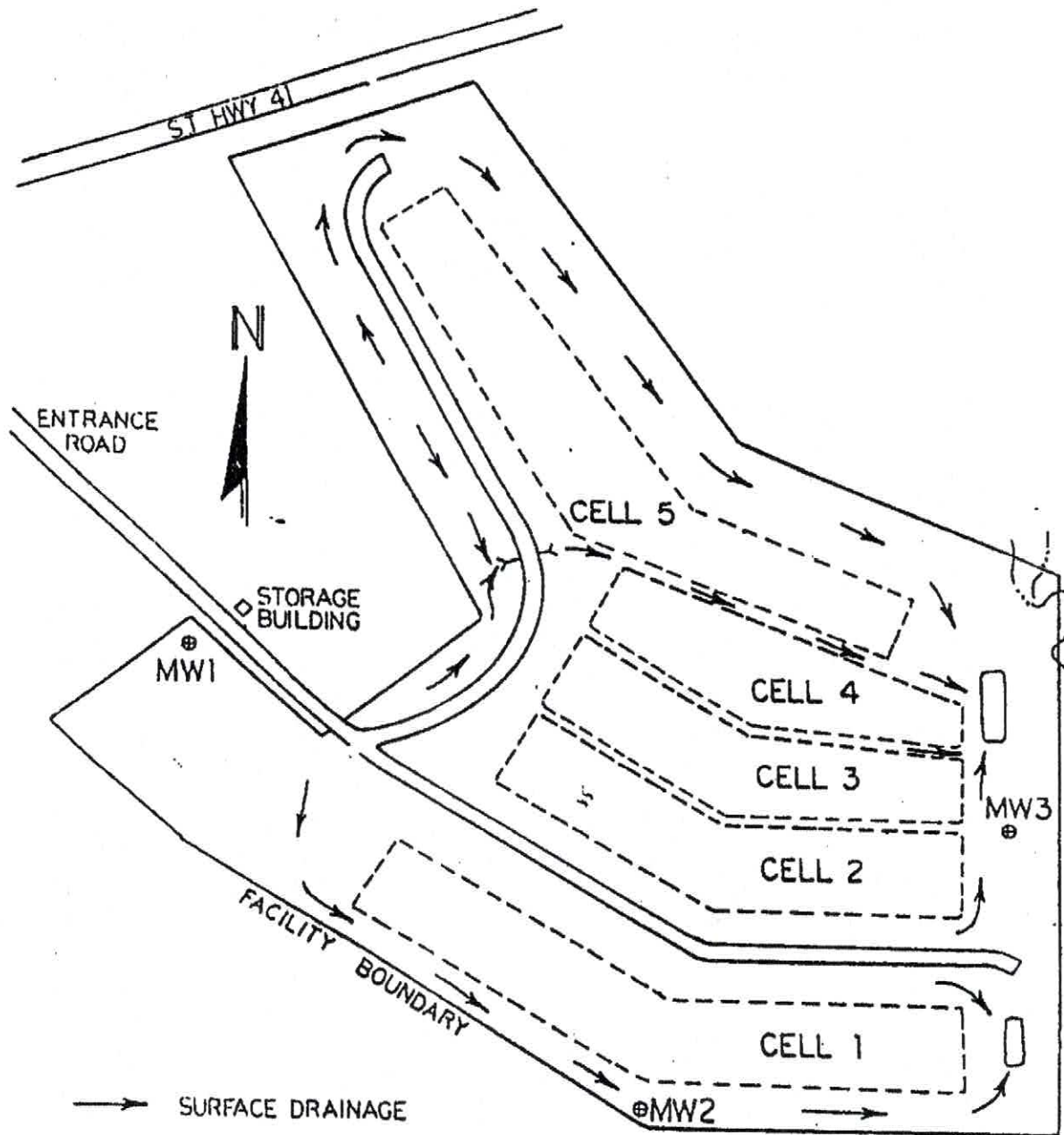


FIGURE 2: WILCOX COUNTY-EAST
SANITARY LANDFILL SITE DETAILS



Wilcox County Sanitary Landfill
Explosive Gas Monitoring Plan
March 30, 1989

feet of green brown sandy clay and silt with occasional layers of calcareous sandstone. The lower unnamed member is composed of between 100 and 200 feet of gray, blocky clay with some sand in the upper portion. The clayton Formation is composed of the upper McBryde Limestone Member and the lower Pine Barren Member. The McBryde Limestone Member is composed of white, argillaceous, chalky limestone. The Pine Barren Member is composed of hard yellow sandy limestone, yellow micaceous sand and light gray sandy calcareous silt. The Clayton Formation is approximately 220 feet thick and overlies the Ripley Formation. There are also some Terrace Deposits, consisting of red brown gravelly sand located on high ground on the northern side of the site.

Local wells are screened in gravelly sand of the terrace deposits located northwest of the site and overlying the Porters Creek Formation and in the Ripley Formation. Neither the Porters Creek Formation nor the Clayton Formation are classified as aquifers in Wilcox County. The clay that is present on-site, which is part of the lower unnamed member of the Porters Creek Formation, acts as the lower confining unit of the surficial aquifer located in the terrace deposits. On-site, the terrace deposits are located only on the extreme northern side and are too thin to be considered an aquifer. The city of Camden's public water supply wells are 390 and 441 feet deep and screened in the Ripley Formation. Public water is available in the area.

The site is located in an isolated area where groundwater is little used. The site is underlain by approximately 100 feet of impervious clay. This clay acts as a lower confining unit for the local surficial aquifer. The local surficial aquifer is located uphill and up-dip from the site and out of its influence. The major regional aquifer is located in the Ripley Formation approximately 350 feet beneath the site and is protected by the clay. A sanitary landfill on this site should not represent a threat to local groundwater.

The surface topography consists of a ridge beginning at the highway northeast of the entrance road sloping and running southeast through the middle of the site. Therefore, surface drainage is to the southwest and northeast perpendicular to the ridge and then southeastward along the property boundaries to the



Wilcox County Sanitary Landfill
Explosive Gas Monitoring Plan
March 30, 1989

lowest end of the site which is east of the cells. On site stratigraphy consists of from two to over 12 inches of top soil followed by up to 14 inches of tan silty sand. This is followed by two to three feet of red silty clay and then by 3.5 to more than nine feet of gray silty clay.

1.3 Facility Structures

The only building on the site is a portable single story small wooden structure used by the landfill operator for tool storage that measures approximately 8' wide by 14' long. The structure has a wooden floor, wooden interior and plywood exterior. There are three windows and one door. The structure is on a wooden skid foundation.

2.0 EXPLOSIVE GASES AND CONCENTRATIONS

Since this facility accepts household organic wastes, methane gas produced as a result of biodegradation of the waste is the explosive gas of primary concern at this site. As stated in the ADEM Administrative Code, explosive gas concentrations shall not exceed the lower explosive limit at the facility boundary. Concentrations in facility structures shall not exceed twenty-five percent of the lower explosive limit. For methane gas, these limits are as follows:

<u>Monitoring Point</u>	<u>Concentration, % Vol. in Air</u>	<u>%LEL</u>
Facility Boundary	5.3	100%
Facility Structures	1.3	25%

3.0 EXPLOSIVE GAS MONITORING

3.1 Method To Be Used

Because of the waste type, structures, site geology and surrounding land use, installation of permanent gas monitoring structures are not necessary. Therefore, it is proposed to monitor for methane gas using a portable gas monitoring device similar to those used in detecting methane gas in mining and



Wilcox County Sanitary Landfill
Explosive Gas Monitoring Plan
Rev. April 4, 1990

industrial operations. This method utilizes a catalyst and combustible gas indicator for the detection of explosive gas levels. Air samples are drawn into the device by a hand aspirator bulb where catalytic combustion used in Method 502A "Combustible Gas Indicator Method", in the Sixteenth Edition of Standard Methods for the Evaluation of Water and Wastewater determines the amount of gas in the sample.

3.2 Facility Boundaries

Using the method described in section 3.1 of this document, a worker will monitor for explosive gases around the facility boundary. This will be done by having the worker take the device to locations along the perimeter of the facility as shown in the Figure on page 9 and sample the air from holes driven vertically between three and five feet deep with a steel rod. The worker shall read and record the gas concentration in percent LEL (lower explosive limit) from the monitoring device. At least two tests will be made along each of the four sides of the property lines for a total of at least eight tests for this site. The worker shall observe the closed cell areas for signs of dead vegetation which could indicate a methane gas source. The worker shall investigate such conditions by taking a test in the center of that area.

Since methane is also usually associated with groundwater, the worker shall also check for the presence of the gas near any groundwater seeps and within any drainage culvert that may be encountered around the perimeter of the active and closed cell areas. The location of the seep and the gas level present will be recorded in the report.

3.3 Facility Structures

The worker shall also monitor methane gas concentrations inside and around each structure described in Section 1.3

3.4 Reports



Wilcox County Sanitary Landfill
Explosive Gas Monitoring Plan
March 30, 1989

Form 1 will be used by the worker to record the locations where samples were taken and the results. The worker shall sign and date the form.

4.0 MONITORING AND REPORTING FREQUENCY

Because of the geologic, hydrogeologic, and hydraulic conditions existing at this site, it is proposed to monitor the site annually for methane gas. This will be done during one of the semi-annual groundwater sampling runs. Reports will be kept at the Wilcox County Landfill supervisors office for inspection by the Department.

5.0 EMERGENCY MEASURES

If during monitoring, explosive gas levels exceeds the limits specified in Section 2.0 of this plan, the following steps will be taken immediately to ensure protection of human health and property:

5.1 General Measures

1. All open flames in the area shall be immediately extinguished;
2. All electrical service in the area will be immediately disrupted at the nearest breaker box;
3. Any heavy machinery in the area will be immediately shut down; and
4. All personnel shall leave the area by the most convenient means of egress to a designated area well away from the high risk area.

5.2 Facility Structures

1. Prior to evacuation of a structure, it will be the responsibility of the official in charge at the site to open all windows and doors to allow ventilation of the structure;
2. The official in charge will account for each man present at the site after everyone has been



Wilcox County Sanitary Landfill
Explosive Gas Monitoring Plan
March 30, 1989

evacuated to a designated area; and
3. After each person has been accounted for at the site, the local fire authorities will be called to the site to handle the emergency.

5.3 Worker Safety

Workers will not be allowed to return to the site in the event of an emergency until the area has been declared safe by local fire authorities and/or the worker monitoring the site for the explosive gases.

6.0 ADEM NOTIFICATION

In the event of an emergency, the Department will be immediately notified of the explosive gas levels detected and the steps taken to protect human health and property. Within fourteen days of the emergency situation, a remedial plan for the release of the explosive gas will be submitted to the department, describing the nature and extent of the problem and a proposed remedy. This plan will be implemented upon approval by the Department.