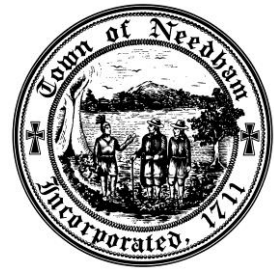


SELECT BOARD

Special Meeting Agenda

6:00 p.m. April 4, 2023

ROSEMARY RECREATIONAL COMPLEX



Pursuant to Chapter 2 of the Acts of 2023, meetings of public bodies may be conducted virtually provided that adequate access is provided to the public.

To listen and view this virtual meeting on a phone, computer, laptop, or tablet, download the “Zoom Cloud Meeting” app in any app store or at www.zoom.us. At the above date and time, click on “Join a Meeting” and enter the meeting or click the link below to join the webinar:

<https://us02web.zoom.us/j/83653117812?pwd=bVNNRllnRjAwRmRWcnJseUFDbHQzUT09>

Passcode: 489891

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Webinar ID: 836 5311 7812

1.	6:00	Town Manager Approve Memoranda of Agreement between the Town and the Needham Firefighters Local 1706, Units A and B for FY2023 and FY2024 – 2026
2.	6:15	Claxton Field Update - Katie King, Assistant Town Manager/Director of Operations - Carys Lustig, Director of Public Works - Tim McDonald, Director of Health & Human Services - Stacey Mulroy, Director of Park & Recreation
3.	6:45	Adjourn

CONSENT AGENDA

1.	Extend the authorization granted to the Town Manager by its vote of June 9, 2020 to grant all local approvals necessary to allow existing local businesses to utilize outdoor seating in parking lots, on-street parking spaces, sidewalks, landscaped yard areas or other appropriate locations to provide more space to serve patrons until April 1, 2024, such authorization to remain subject to all the terms and conditions stated in the Board’s original vote and to Chapter 2 of the Acts of 2023.
2.	Vote to waive the Outdoor Dining License fees for Calendar Year 2023.
3.	Authorize the consumption of alcohol, as defined by M.G.L. c. 138, Section 1, that has been sold in association with take-out service of food pursuant to Section 13 of c. 53 of the Acts of 2020, as amended by Chapter 2 of the Acts of 2023, at the Town Common, the Needham Heights Common/Avery Square, and Eaton Plaza under the provisions of Section 3.1.9 of the General By-laws of the Town until April 1, 2024.



**Select Board
TOWN OF NEEDHAM
AGENDA FACT SHEET**

MEETING DATE: 4/4/2023

Agenda Item	Approve Memoranda of Agreement between the Town and the Needham Firefighters Local 1706, Units A and B for FY2023 and FY2024 – 2026
Presenter(s)	Kate Fitzpatrick, Town Manager

1.	BRIEF DESCRIPTION OF TOPIC TO BE DISCUSSED
The Town Manager will recommend that the Board approve and sign Memoranda of Agreement between the Town and the Needham Fire Union Local 1706 for the period FY2023 and FY2024 through FY2026. The Agreements achieve a first step in the Board's objective to remove the Fire Department from the Civil Service system, improve the Town's recruitment efforts by increasing EMT/Paramedic pay, expand educational opportunities, and includes other monetary and language items as shown on the attached MOA.	
2.	VOTE REQUIRED BY SELECT BOARD
<i>Suggested Motion:</i> That the Board approve and sign the Memoranda of Agreement between the Town and the Needham Fire Union Local 1706 for FY2023 and FY2024 through FY2026.	
3.	BACK UP INFORMATION ATTACHED
1. MOAs between the Town and the Needham Fire Union Local 1706	

**Memorandum of Agreement
Fiscal Year 2023**

Agreement is hereby made this _____ day of _____, 2023 by and between the Town of Needham (hereinafter the "Town") and the Needham Firefighters Local 1706 Units A and C (hereinafter the "Union"). Except as expressly set forth herein, all provisions of the collective bargaining agreement between the Town and the Union, which by its terms is in effect through June 30, 2022, remain in full force and effect.

1. The term of the Agreement shall be July 1, 2022 through June 30, 2023.
2. All Base Wages contained in Article 25 (Unit A) and Article 22 (Unit C) shall be increased by 2.5% effective July 1, 2022.

Town of Needham

Needham Firefighters Local 1706

Date: _____

Date: _____

Town Manager/Date

This agreement shall be executed in one or more counterparts, each of which when so executed shall constitute but one and the same instrument

Memorandum of Agreement

Fiscal Year 2024, 2025, 2026

Agreement is hereby made this _____ day of _____, 2023 by and between the Town of Needham (hereinafter the “Town”) and the Needham Firefighters Local 1706 Units A and C (hereinafter the “Union”). Except as expressly set forth herein, all provisions of the collective bargaining agreement between the Town and the Union, which by its terms is in effect through June 30, 2022, remain in full force and effect.

1. The term of the Agreement shall be July 1, 2023 through June 30, 2026.
2. All Base Wages contained in Article 25 (Unit A) and Article 22 (Unit C) shall be increased as follows:

FY2024 (July 1, 2023)

2.5% increase in base wages

Unit A: 1% increase in top step

Unit C: new Step 9, 1% differential from Step 8

FY2025 (July 1, 2024)

3% increase in base wages

1% increase in top step

FY2026 (July 1, 2025)

3% increase in base wages

1% increase in top step

3. Amend the EMT and Paramedic Differential sections under Article 25 (Unit A) and Article 22 (Unit C) Wages as follows:

EMT Differential Effective July 1, 2008 all registered Emergency Medical Technicians (EMT) shall be granted additional compensation of 5% annual base salary to be paid weekly.

Effective July 1, 2023 all registered Emergency Medical Technicians (EMT) shall be granted additional compensation of 6% annual base salary to be paid weekly.

Effective July 1, 2024 all registered Emergency Medical Technicians (EMT) shall be granted additional compensation of 7% annual base salary to be paid weekly.

Effective July 1, 2025 all registered Emergency Medical Technicians (EMT) shall be granted additional compensation of 8% annual base salary to be paid weekly.

Paramedic Differential Effective July 1, 2008 for certification as a Paramedic, a differential of 11.5% of annual base pay will be paid weekly in accordance with the provisions contained in Article 4 Section 6 of this Agreement for those in the ambulance rotation.

Effective July 1, 2023 for certification as a Paramedic, a differential of 12.5% of annual base pay will be paid weekly in accordance with the provisions contained in Article 4 Section 6 of this Agreement for those in the ambulance rotation.

Effective July 1, 2024 for certification as a Paramedic, a differential of 13.5% of annual base pay will be paid weekly in accordance with the provisions contained in Article 4 Section 6 of this Agreement for those in the ambulance rotation.

Effective July 1, 2025 for certification as a Paramedic, a differential of 14.5% of annual base pay will be paid weekly in accordance with the provisions contained in Article 4 Section 6 of this Agreement for those in the ambulance rotation.

It is understood that firefighters who are certified as paramedics will receive paramedics pay as set forth above, and will not also receive EMT pay.

4. Insert a new Article 4 (Unit C) Advanced Life Support Program as follows:

ARTICLE 4
ADVANCED LIFE SUPPORT PROGRAM

The Town agrees to upgrade to the Advanced Life Support level of Emergency Medical Services subject to the following conditions:

If, in the discretion of the Town, the ALS program, or the implementation of the ALS program, shall result in a situation in which the net increase in costs associated with ALS is not offset by a net increase in revenue associated with ALS, or shall be deemed otherwise not financially feasible, the Town may unilaterally discontinue the ALS program or program implementation, which decision shall not be grievable.

The Town shall have the discretion to determine the appropriate number of Paramedics necessary for the operation of the Emergency Medical Service.

EMT Certification It is a condition of employment that all firefighters appointed after July 1, 1991 must obtain EMT certification during the applicable probationary period, and maintain such certification thereafter. Failure to obtain or maintain certification as an EMT will result in termination from Town service, unless waived by the Fire Chief and Town Manager in extraordinary circumstances.

Paramedic Certification Employees hired on the basis of paramedic certification or who received tuition and/or the Paramedic Certification Incentive Payment are required as a condition of employment to maintain the Paramedic Certification thereafter except as set forth below. Failure to maintain such Paramedic Certification will result in termination from Town service, unless waived by the Fire Chief and Town Manager in extraordinary circumstances.

Firefighter/Paramedics who are promoted in rank or special assignment and thereby removed from the ambulance rotation, and who remain certified, will receive out of rotation paramedic differential that is 4.5% higher than the current EMT differential. Paramedics out of rotation must maintain their paramedic certification as a condition of employment.

5. Amend Article 25 (Unit A) and Article 22 (Unit C) Wages as follows:

Training Stipend (effective the July 1st after the Needham Fire Department is removed from the Civil Service System and in accordance with the provisions of Article 26).

Unit A

<u>EMT</u>		<u>Paramedic</u>	
Captain	\$53.56	Captain	\$76.77
Lieutenant	\$45.10	Lieutenant	\$64.62
Firefighter	\$34.23	Firefighter	\$49.04

Unit C

<u>EMT</u>		<u>Paramedic</u>	
Deputy	\$56.04	Deputy Chief	\$80.33

6. Delete Section 3(d) of Article 4 Duties – Firefighters (Unit A) and insert in place thereof the following:

- (d) Newly hired firefighters shall be assigned to a training facility, i.e., Mass. Fire Academy, Boston Fire Academy, or a similar facility, mutually agreed upon by both parties, prior to beginning a regular scheduled shift, and shall not be assigned overtime duty until completion of their training. **It is agreed that certified paramedics are authorized to work on the ambulance prior to attending the appropriate fire academy. The schedule for paramedics working prior to attending the fire academy shall consist of four 10-hour days as determined by the Fire Chief.**

7. Delete Section 6(e) of Article 4 (Unit A) Duties – Firefighters and renumber following sections accordingly once the Needham Fire Department is removed from the Civil Service System.
8. Amend Section 6(g) of Article 4 Duties – Firefighters (Unit A) as follows:

(g) Firefighter/Paramedics who are promoted in rank or special assignment and thereby removed from the ambulance rotation, and who remain certified, will receive out of rotation paramedic differential that is 4.5% higher than the current EMT differential. **Paramedics out of rotation must maintain their paramedic certification as a condition of employment.**
9. Amend Section 6(h)1, 2 and 3 of Article 4 Duties – Firefighters (Unit A) as follows:

(h) Once and as long as the Town reaches a complement of 32 paramedic in rotation, the most senior paramedic who desires to do so may opt out of the paramedic rotation in accordance with the following:

 1. For a paramedic with at least ten years of service as a paramedic in Needham in rotation, no paramedic differential will be paid. In such case, only the 5% EMT differential will be paid.
 2. For a paramedic with at least 15 years of service as a paramedic in Needham in rotation, a senior paramedic opt-out differential will be paid that is 2.25% higher than the current EMT differential., ~~in addition to the 5% EMT differential.~~
 3. For a paramedic with 20 or more years of service, a senior paramedic opt-out differential will be paid that is 4.5% higher than the current EMT differential. ~~in addition to the 5% EMT differential.~~
10. The parties acknowledge the Town’s right to revoke its acceptance of the Civil Service statutes. Subsequent to the Town taking the necessary steps required by law to withdraw from Civil Service, delete Article 5 (Unit A) and Article 4 (Unit C) and insert in Unit A the following:

ARTICLE 5

PROMOTION

Section 1. Applicability This policy applies to promotions to the rank of lieutenant, captain, deputy chief and assistant chief. Promotions are based upon the merits of the individuals and their personal performance in the promotion process.

Section 2. Policy It is the policy of the Needham Fire Department to recommend promotions based upon an employee's training, experience and merit as determined pursuant to this Article. The Town Manager is the Appointing Authority for all employees of the Department.

3. Procedures

- 3.1 The Town will select a vendor to administer promotional examinations and/or assessment centers to qualified candidates who meet the eligibility criteria. The vendor will be experienced in developing and administering promotional exams for municipal Fire Departments. The Union president or designee may participate in the selection process for the vendor.
- 3.2 All components of the exams shall comport with testing standards generally accepted by acknowledged experts in public safety promotional exams, and shall fairly test the knowledge, skills, and abilities that can be practically measured and that are actually required to perform the primary functions of the position of lieutenant, captain, deputy chief, or assistant chief.
- 3.3 The Human Resources Department will post written announcements of any scheduled promotional examination no less than 180 days in advance of the test date and will ensure that such announcements are distributed to eligible candidates. The Department will ensure that eligible employees on leave status will be mailed a copy of the announcement.
- 3.4 The Human Resources Department will ensure that all promotional materials, documents, scores, and completed evaluation forms remain confidential and are kept in a secure location.
- 3.5 The Human Resources Department will maintain copies of active promotional lists.
- 3.6 A recommended list of reading materials from which all questions on the written examination will be taken, will be made available to all personnel no less than 180 days prior to the exam date.
- 3.7 The examinations will be provided without cost to the participating employees.
- 3.8 Examinations
 - 3.8.1 The examination will consist of two components: 1. A written examination covering department policies, procedures, rules and regulations, EMS operations, tactical operations, building construction, tools, equipment, and apparatus, supervisory principles, incident command, etc. (50% weight) and 2. An assessment center (50% weight).
 - 3.8.2 Calculation of Education, Experience and Military Service Credit Points will be

added to the score of the examination for education, experience and military service credit as follows:

Education (Maximum Points 1.5)

Associate's Degree	0.5
Bachelor's Degree	1.0
Master's Degree	1.5

Experience (Maximum Points 1.5)

Greater than Five Years	0.5
Greater than Ten Years	1.0
Greater than 15 Years	1.5

Military Service (Maximum Points 1.0)

Greater than Two Years	0.5
Greater than Four Years	1.0

Education, Experience and Military Service Credit Points will be added at the end of the examination process. Applicants for promotion must receive a passing score on the examination (including both the written examination and the assessment center portion) prior to the addition of these points in order to be considered for promotion.

- 3.8.3 The selected vendor will provide an orientation and training for all eligible candidates for promotion in advance of an assessment center. The assessment center portion of the exam shall be video recorded, and the recording will be made available to the candidate by the Town after the assessment center.
- 3.8.4 The selected vendor shall develop and implement measures to ensure that the judges selected to score the assessment centers are not aware of the identity of the candidates and otherwise provide scores based entirely on the performance of the participants in the assessment center exercises and not in any way based on other factors. No member of the command staff of the Needham Fire Department shall communicate with any of the judges concerning the qualifications of promotional candidates, or the performance of any candidate in any aspect of the written exam or assessment center.
- 3.8.5 Within one week of the completion of any exam, the vendor shall tabulate the total scores of all candidates and create an eligible list in rank order from high to low. The eligible list shall be posted in all locations where departmental notices are customarily posted.

Section 4. Eligibility

4.1 To be eligible for promotion to the rank of Lieutenant or Captain, the candidate must be a permanent member of the Needham Fire Department with a minimum of three years of completed service in Needham as of the date of the written examination. To be eligible for promotion to the rank of Deputy Chief and Assistant Chief, the candidate must be a permanent member of the Needham Fire Department with a minimum of two years of service as a lieutenant or captain as of the date of the written examination, and a minimum of ten years of service in the Needham Fire Department.

4.2 Promotional Examination for the Rank of Lieutenant and Captain

4.2.1 A written exam for lieutenant and captain will be given every two years on or about the first Saturday in November. The passing score on the exam will be seventy (70). If fewer than three (3) individuals achieve a score of seventy (70), the Town is not obligated to make an appointment from the list. The date of the exam may be changed by the Town with 90 days' notice to the Union provided that the new date shall be no sooner than 180 days from the publication of the reading list or more than 210 days from publication of the reading list.

4.2.2 Passing the exam will admit candidates to the next phase of the promotion process. Individuals with passing exam scores will remain eligible for promotion from that list until a new list is created.

4.3 Promotional Examination for the Rank of Deputy Chief and Assistant Chief

4.3.1 A written promotional exam for the rank of deputy chief and assistant chief will be given every two years on or about the first Saturday in November. The passing score on the exam will be seventy (70). If fewer than three (3) individuals achieve a score of seventy (70) on the exam, the Town is not obligated to make an appointment from the list. The date of the exam may be changed by the Town with 90 days' notice to the Union provided that the new date shall be no sooner than 180 days from the publication of the reading list or more than 210 days from publication of the reading list.

4.3.2 Passing the exam will admit candidates to the next phase of the promotion process. Individuals with passing exam scores will remain eligible for promotion from that list until a new list is created.

4.4 Candidate Selection

4.4.1 The Human Resources Department will create a list of candidates ranked from highest score to lowest score. Where the number of promotional appointments to be made is "n," the Fire Chief may make a recommendation for appointment from

the first $3n + 1$ persons on the list. The Chief may by-pass a candidate with a higher score on a reasonable and objective basis. It is agreed that a tie score will not be considered a by-pass.

4.4.2 The Town Manager will make the final selection of candidates for promotion based on a recommendation by the Fire Chief.

4.4.3 Candidates who are not selected for promotion will remain eligible for future promotion until a new list is created.

4.5 Provisional Promotion

When there is no active eligible list, the Chief may fill the vacancy on a provisional basis until the next examination.

4.6 Appeal

4.6.1 Within ten (10) business days (Monday through Friday excluding holidays recognized under this Agreement) of the publication of an eligible list, any participant who believes that the exam failed in any way to comply with the requirements of this policy, and that such failure affected the participant's placement on the eligible list, may file a grievance under the Grievance Provisions of the Agreement and the Union shall decide whether to proceed to arbitration over any such grievance.

4.6.2 Within ten (10) business days (Monday through Friday excluding holidays recognized under this Agreement) of notice to the Union of the Town Manager's final selection per Section 4.4.2, any candidate that was by-passed by the selection and believes there was no reasonable and objective basis for the by-pass may file a grievance under the Grievance Provisions of the Agreement and the Union shall decide whether to proceed to arbitration over any such grievance.

4.6.3 If the Union decides to process a grievance to arbitration under 4.6.1 or 4.6.2, it shall do so pursuant to the Expedited Labor Arbitration Rules of the American Arbitration Association. The Union and the Town shall share in the fees and expenses of the AAA and the arbitrator selected to hear such grievance and the arbitrator's decision shall be final and binding.

4.6.4 If there is no appeal or grievance filed, and/or after any appeal or grievance has been finally determined, the eligible list will be deemed to be finalized and shall be used for any promotions to lieutenant, captain, deputy chief or assistant chief until replaced by a subsequent eligible list

11. Once the Department has been removed from the Civil Service system, delete Sections 2 and 3 of Article 8 – Manpower (Unit A), renumber following sections accordingly, and amend Section 4 as follows:

Section 4. Overtime as required for a full tour of duty (10-hour day or 14-hour night), shall be ~~Civil Service firefighters and shall be~~ compensated at the statutory overtime rate.

12. Amend Section 6 of Article 10 (Unit A) Section 6 of Article 13 (Unit C)– Injury on Duty as follows:

Section 6. Injury on Duty Policy Incorporated herein and considered an integral part thereof is the Injury on Duty Management Policy dated ~~May 3, 1995~~ [Date of Select Board vote].

13. Amend section 1 of Article 11 (Unit A) and Article 14 (Unit C) by changing the date of the Injury on Duty policy to [Date of Select Board vote].

14. Amend Section 3 of Article 13 – Authorized Unpaid Leave of Absence (Unit A) as follows:

Section 3. Union Business Upon timely written request, the Town agrees to grant a total of not more than ~~twenty-eight (28)~~ **forty (40)** tours (one day or one night or one ten-hour shift) off with pay in each fiscal year for Union business. It is agreed that the Town is not required to cover any union business tours on an overtime basis.

15. Amend Article 21 (Unit A) and Article 19 (Unit C) Settlement of Grievances by deleting Section 7 and deleting Section 8 and inserting in place thereof the following:

Section 8. Arbitration Should the grievance remain unsettled after the decision of the ~~Personnel Board~~ **Director of Human Resources**, Local 1706 may, by giving written notice to the Town Manager, submit the grievance to arbitration. Such notice shall be given within fifteen (15) business days from the date of the decision of the ~~Personnel Board~~ **Director of Human Resources**. If such written notice is not given, the grievance shall be deemed to be settled.

And by deleting section 9 of Article 21 (Unit A) and Article 19 (Unit C), renumbering following sections accordingly.

16. Delete in Article 25 (Unit A) and Article 22 (Unit C) Wages the section entitled “Rank Differential.” Delete in Article 25 (Unit A) and Article 22 (Unit C) Wages the section entitled “Compensation Adjustment Option.”
17. Insert in Article 25 (Unit A) and Article 22 (Unit C) a new section as follows:

401A Retirement Plan Effective January 1, 2024 the Town will contribute up to \$500 annually in a two-for-one match to a 401A retirement Plan. For every \$2 contributed by an employee to a Town-sponsored 457 Deferred Compensation Plan, the Town will contribute \$1 to a 401A Plan.

Effective January 1, 2026 the Town will contribute up to \$1,500 annually in a two-for-one match to a 401A retirement Plan. For every \$2 contributed by an employee to a Town-sponsored 457 Deferred Compensation Plan, the Town will contribute \$1 to a 401A Plan.

18. Insert in Article 22 (Unit C) a new section as follows:

Assistant Fire Chief – The Assistant Fire Chief (formerly Deputy Chief of Operations) will be a salaried position ineligible for overtime. The Assistant Chief will be eligible for education pay and EMT/Paramedic pay but no other additional pay types including but not limited to longevity pay and holiday pay.

19. Delete Article 26 (Unit A) and Article 23 (Unit C) Education Incentive Compensation and insert in place thereof the following:

ARTICLE 26

EDUCATIONAL INCENTIVE COMPENSATION

Section 1. — Educational Committee — There shall be established an Educational Committee (hereinafter referred to as the "Committee") comprised of the Fire Chief, the Town Manager his/her designee, and a member of Local 1706 designated by the Union President. It shall be their responsibility to supervise and implement the programs listed below. They have the following responsibilities:

- (a) — Approval of courses, which have been requested by a firefighter, for credit in the Educational Program.
- (b) — Certification of credits after submission of proof by a firefighter and authorization for payment of incentive.
- (c) — Establishing of In-Service training courses.
- (d) — Approval of payment of career pay upon completion of courses.

Section 2. — Members of the bargaining unit as of October 1, 2000 may elect to participate in the Education Incentive Program set forth in this Section, or in Section 3, but not both. Qualifying members of the bargaining unit shall be paid the amounts set forth in this section, in 52 weekly installments:

For 50% of the credits (30 Semester Hours) necessary for a qualifying Associates Degree or 25% of credits (30 Semester Hours) necessary for a qualifying Bachelor's Degree: _____ \$544.50

~~For having earned a qualifying Associate's Degree or 50% of credits (60 Semester Hours) necessary for a qualifying Bachelor's Degree: — \$998.25~~

~~For 75% of credits (90 Semester Hours) necessary for a qualifying Bachelor's Degree: — \$1,452.00~~

~~For the purposes hereof, a qualifying degree shall mean a degree conferred by an educational institution accredited by the State in which such educational institution is located upon completion of a course of study:~~

~~(a) — in the field of Fire Science; or~~

~~(b) — in any field provided that the degree holder has completed such number of credits in areas directly related to Fire Science as is equal to one half the total number of credits required for such degree.~~

~~For the purposes hereof, a qualifying Master's Degree shall mean a Master's Degree conferred by an educational institution accredited by the State in which such institution is located, upon completion of a course of study in the field of public administration, business administration, education, engineering, or any other field if approved in advance by the Education Committee.~~

Section 1. Members of the bargaining unit who have obtained education levels will be paid the educational incentives listed in this section in 52 weekly installments. ~~For the purposes hereof, a qualifying degree shall mean a degree conferred by an educational institution accredited by the State in which such educational institution is located upon completion of a course of study in the field of Fire Science; or in any field provided that the degree holder has completed such number of credits in areas directly related to Fire Science as is equal to one half the total number of credits required for such degree.~~

(a) **Associate's Degree** Members of the bargaining unit shall be paid 7.5% of base pay for completion of a qualifying Associate's Degree, matriculation in a qualifying Bachelor's Degree program equal to the Associate's Degree level, or for obtaining and maintaining a Construction Supervisor's License, Journeyman Plumber's License, Master Plumber's License, Journeyman Electrician's License or Master Electrician's License.

(b) **Bachelor's Degree** Members of the bargaining unit shall be paid 15% of base pay for completion of a qualifying Bachelor's Degree.

(c) **Master's Degree** Members of the bargaining unit shall be paid 15% of base pay for completion of a **qualifying** Master's Degree. ~~in Fire Science.~~

Section 2. For the purposes hereof, a qualifying degree shall mean a degree conferred by an educational institution accredited by the State in which such educational institution is located

upon completion of a course of study:

- (a) in the field of Fire Science, Emergency Management, Fire Administration, Public Administration, Business Administration, Management, Nursing, Paramedicine, and Engineering; or
- (b) Other degree programs may be accepted on a case-by-case basis if deemed job-related by the Town Manager and Fire Chief. Employees may need to show transcripts and coursework completed for degrees in order to have degree deemed job-related.

~~It is agreed that members of the bargaining unit as of October 1, 2000 who are receiving education payment at the Associates Degree/60 credit or 90 credit level, will be entitled to participate in the new education program at the Associates Degree level.~~

Section 3. In Service Training

- (a) An in-service training program shall be conducted within the Fire Service. The program shall provide a minimum of 60 hours off-duty training. ~~To be eligible for the Transitional Career Incentive pay, an individual must satisfactorily complete 40 hours of off-duty, in-service training for which he/she will be paid time and one-half his/her rate of pay in effect at the time of the training session. Credit for courses, which would be duplication of courses received elsewhere may be allowed by the Committee upon written submission of proof of attendance by the individual desiring to receive such credit for other in-service courses.~~
- (b) Members of the bargaining unit certified as EMTs shall be eligible for 60 hours of off-duty training annually at their overtime rate of pay. Members of the bargaining unit who are certified as paramedics (on-rotation and off-rotation) shall be eligible for 86 hours of off-duty training annually at their overtime rate of pay. ~~Courses taken for Emergency Medical Training (EMT) recertification shall constitute off-duty in-service training for the purpose of this Section and the Section below ("Transitional Career Incentive Pay").~~
- (c) ~~Employees attending an Emergency Medical Training (EMT) course during off-duty hours shall be compensated for all such hours up to 81 hours at their overtime rates of pay. The Town will reimburse employees for the costs of registration fees and books, if such books are required, incurred in connection with said EMT course. To the extent only that any tuition or course charge is imposed by a hospital where such EMT training is provided, the Town will reimburse the employee. It is expressly understood that the foregoing reimbursement for tuition or course charges will not apply in the case of EMT training at any college or university.~~

- (c) Nothing in this section shall affect on-duty training for which no extra compensation shall be paid.
- (d) Effective the July 1st after the Needham Fire Department has been removed from the Civil Service system, members of the bargaining unit hired before that date may elect to receive the 60 or 86 hours of off-duty training paid at overtime as set forth in section 4(b) or may elect to receive the training stipend as set forth in Article 25 (Unit A) or Article 22 (Unit C) Wages. Members who elect to receive the training stipend cannot elect at a future date to revert back to training paid at overtime. Members of the bargaining unit hired after the July 1st after the Needham Fire Department has been removed from the Civil Service system will receive the training stipend and will not be eligible for the off-duty training hours paid at overtime.
- (e) Members of the bargaining unit who receive the training stipend will be required, as a condition of employment, to complete 60 (EMT) or 86 (paramedic) hours of training annually. Proof of such attendance must be submitted to the satisfaction of the Fire Chief.
- (f) The Fire Chief may authorize off-duty training paid at overtime in addition to the amounts set forth in subsection (b) and subsection (e).

Section 4. Transitional Career Incentive Pay

- (a) To be eligible for the Transitional Career Incentive pay, an individual must satisfactorily complete 40 hours of off duty, in-service training for which they will be paid time and one-half their rate of pay in effect at the time of the training session. Firefighters employed by the Needham Fire Department before October 1, 2009 and who do not receive educational incentive pay and who each year satisfactorily complete 40 hours of off duty in-service training, or its equivalent as determined by the Board, shall be paid career incentive pay for service in the Needham Fire Department as follows:

~~For the fiscal year in which the 5th through 9th service anniversary occurs: \$600~~

~~For the fiscal year in which the 10th through 19th service anniversary occurs: \$1,250~~

For the fiscal year in which the 20th or longer service anniversary occurs: ~~\$2,300~~
\$3,500

- (b) Such payments shall be in lump sum increments ~~as determined by the Committee~~ and shall be rendered on any reasonable dates after July 1 and after completion of the in-service training yearly.

- (c) Any incentive pays referred to in Article 26(Unit A) and Article 23 (Unit C) shall not be used to compute holiday or overtime rates. It is agreed and understood that there shall be no duplication of incentive pays referred to in this article.
20. Insert in Article 30/Miscellaneous Provisions (Unit A) and Article 27 (Unit C) a new section as follows:
- Section 10 (Unit A)/Section 11 (Unit C). Civil Service Rights** Firefighters permanently appointed under Chapter 31 shall preserve all other rights and privileges to which they are entitled by law as a consequence of the Town's departure from Civil Service.
21. Amend section 6 of Article 30 (Unit A) Article 27 (Unit C) Miscellaneous Provisions as follows:
- Section 6. Residency** Members of the bargaining unit ~~must~~ ~~may~~ establish residency in a city or town whose perimeter is within 20 miles of the perimeter of the Town of Needham. Members of the bargaining unit whose residence on July 1, 2016 is beyond the 20-mile limit shall be grandfathered only for the period that they continue to reside in such city or town. **The Town Manager and Fire Chief may waive the residency provision in extraordinary circumstances.**
22. Once the Department has been removed from the Civil Service system, insert a new Article 31 (Unit A) and Article 28 (Unit C) Lay-off and Recall as follows:

ARTICLE X

LAY-OFF AND RECALL

Section 1. Lay-offs shall be made in order of seniority. For purposes of this paragraph, seniority shall be determined by date of permanent appointment to the Department. Subsequent recall shall take place on the same basis. Firefighters shall be eligible for recall for a period of ten calendar years from the effective date of the layoff, unless they decline a recall offer by the Town or fail to respond to a recall offer within thirty (30) calendar days from the date of receipt of the recall notice mailed by the Town to the last known address provided by them to the Town.

Section 2. Recall/Reinstatement Benefits

In the event that a Firefighter is laid off and reinstated, he/she shall be entitled to the following benefits upon return:

- (a) Seniority Seniority shall be determined by date of permanent appointment to the Department.

- (b) Longevity The recalled Firefighter shall be entitled to receive credit for prior service for the purposes of longevity payment. The Firefighter's anniversary date for the purposes of longevity payment shall be adjusted by the number of calendar days the Firefighter was separated from his/her permanent position.
- (c) Sick Leave The recalled Firefighter shall be credited with his/her non-occupational sick leave bank as of the time of the lay-off. The Firefighter shall not accrue sick leave during the period that he/she was separated from his/her permanent position.
- (d) Vacation The recalled Firefighter shall be granted credit for prior service for the purposes of vacation. The Firefighter shall not be entitled to vacation for the period that he/she was separated from his/her permanent position. Upon re-hire, the Firefighter shall be granted a proportionate amount of vacation as the number of full calendar months to be worked in the current year bears to the number of calendar months in a year. Partial vacation days shall be rounded up to the closest whole number.
- (e) Step Raises The recalled Firefighter shall be reinstated at the step rate in which he/she was paid at the time of the lay-off. The Firefighter's next step date shall be adjusted by the number of calendar days that he/she was separated from his/her permanent position.

Town of Needham

Needham Firefighters Local 1706

Date: _____

Date: _____

 Town Manager/Date

This agreement shall be executed in one or more counterparts, each of which when so executed shall constitute but one and the same instrument

Memorandum of Agreement

Agreement is hereby made this ____ day of _____, 2023 by and between the Town of Needham (hereinafter the “Town”) and Needham Firefighters Local 1706, IAFF, (hereinafter the “Union”):

The Town and the Union agree to reopen the collective bargaining agreement to discuss improvements and enhancements to the Advanced Life Support program in the Town, including expansion to paramedic engine companies, options for recruiting and retaining paramedics, and similar items.

Except as expressly set forth herein, all provisions of the collective bargaining agreements between the Town and the Union, which by their terms are in effect through June 30, 2022, remain in full force and effect.

For the Town:

Date: _____

For the Union:

Date: _____

This agreement shall be executed in one or more counterparts, each of which when so executed shall constitute but one and the same instrument.

Memorandum of Agreement

Agreement is hereby made this ____ day of _____, 2023 by and between the Town of Needham (hereinafter the “Town”) and Needham Firefighters Local 1706, IAFF, (hereinafter the “Union”):

The Town and the Union agree that if the Town establishes a public safety/firefighter wellness program, the Union will actively support the program and encourage members to participate.

Except as expressly set forth herein, all provisions of the collective bargaining agreements between the Town and the Union, which by their terms are in effect through June 30, 2022, remain in full force and effect.

For the Town:

Date: _____

For the Union:

Date: _____



**Select Board
TOWN OF NEEDHAM
AGENDA FACT SHEET**

MEETING DATE: 4/4/2023

Agenda Item	Claxton Field Update
Presenter(s)	Katie King, Assistant Town Manager/Director of Operations Carys Lustig, Director of Public Works Tim McDonald, Director of Health & Human Services Stacey Mulroy, Director of Park & Recreation

1.	BRIEF DESCRIPTION OF TOPIC TO BE DISCUSSED
	Staff will update the Board on the status of the Claxton Field environmental sampling project.
2.	VOTE REQUIRED BY SELECT BOARD
	N/A - Discussion Only
3.	BACK UP INFORMATION ATTACHED
	1. Claxton Field Update Memo 2. Claxton Field Environmental Sampling and Analysis Memo, Weston & Sampson



MEMORANDUM

TO: Select Board, Park & Recreation Commission, Board of Health, School Committee, Finance Committee, and Community Preservation Committee

FROM: Katie King, Assistant Town Manager/Director of Operations; Carys Lustig, Director of Public Works; Timothy McDonald, Director of Health and Human Services; Stacey Mulroy, Director of Park & Recreation

CC: Kate Fitzpatrick, Town Manager; David Davison, Assistant Town Manager/Director of Finance; Dan Gutekanst, Superintendent of Schools; Christopher Heep, Town Counsel

RE: Claxton Field Update

DATE: March 31, 2023

Board and Committee Members:

The Select Board is holding a special meeting on Tuesday, April 4th. We have added to the agenda a report on the status of the Claxton Field testing. The Board is meeting at 6:00 p.m. at the Rosemary Recreation Center, and the testing update will be the second item. This meeting will be available on Zoom.

This memo is aimed to provide updated information in advance of that meeting.

Background

Claxton Field at 1380 Central Avenue includes two softball fields with an overlapping multi-purpose field, trail access, picnic tables, restrooms, and a parking lot. It had a playground area, which was recently removed. This site served as a burn dump prior to the development of the Recycling and Transfer Station in the 1950s/1960s. Claxton was redeveloped as a recreational facility approximately 60 years ago, when additional soil fill was brought to the site and leveled to create the existing fields.

At the request of the Massachusetts Department of Environmental Protection (MassDEP) the Town of Needham engaged Weston & Sampson Inc (W & S) to provide sampling and analysis of the soil composition at Claxton Field. The Town's testing plan was submitted to MassDEP by W & S on February 9, 2023 and was approved on February 14, 2023.

A joint meeting of the Select Board, the Park and Recreation Commission, the Finance Committee, the Board of Health, the School Committee, and the Community Preservation Committee was held on February 15, 2023 to discuss the issue and provide public information about the potential risks at this property and provide contingency planning should the facility need to be closed.

Borings were conducted and completed on February 16, 2023 with samples sent out to a certified laboratory for the testing of:

- Polycyclic Aromatic Hydrocarbons (PAH);
- MCP 14 Metals;
- Asbestos; and
- Dioxins.

Summary of results

Final results from the soil analysis were received on March 29, 2023 and then discussed internally and with W & S on March 30, 2023.

The testing results are consistent with our anticipated outcome scenario #2, the testing finds some contamination¹ at Claxton in the subsurface material, but low levels of contamination² in the surficial soil³, allowing the surface to continue to be used. The results for soil⁴ did indicate that the Town will trigger the Massachusetts Contingency Plan (MCP) which is administered through a Licensed Site Professional (LSP). The Town will continue to engage W & S as an LSP on their behalf to work on potential follow-up testing and reporting requirements. The Town will be working with W & S to file with MassDEP within the 120 days of notification of test results as required.

Continued Usage of Claxton

The results of the testing are consistent with the assumed contamination that W & S and the Town discussed after boring samples were taken in January of 2022. The testing found that the topsoil on the field is clean fill⁵, and that usage as an athletic field would not carry any inherent risk. At this time the Town has no data to indicate that usage of the field is unsafe and will be keeping the fields open.

The Town will need to work with MassDEP and file information with them accordingly. The Town would work with W & S and MassDEP to ensure that appropriate safeguards are in place during the renovation project. Materials would be kept on site and appropriately capped.

The detailed drafted memo is attached with results.

Stockpiled Materials and Laydown Space

The material that was in this area is permissible to remain on site and can be placed back in the area of generation and is not required to be removed from the site. The Town will be coordinating with the contractor as this project is completed to ensure that these appropriate measures are taken during the closeout of the project in restoring this area.

Renovation & Reporting

In the next few weeks, the Town will be working with W & S and MassDEP to provide more clarity on the site conditions and any modifications that may be needed to the intended field improvements. At this time, the only major change to the design will include the expansion of the installation of the geotextile membrane to go beyond the field limits to areas that were identified through sampling as having contaminated materials in the subsurface soil. This may also trigger additional permitting requirements through the Conservation Commission.

¹ Concentrations that require reporting to MassDEP

² Concentrations similar to natural soils which do not reporting to MassDEP

³ Top 12 inches

⁴ Greater than 12 inches below surface

⁵ Contaminant concentrations similar to natural soils

Based on current information, the Town will be moving forward with the project as designed and with the modifications added to the geotextile membrane. The Town will be requesting that the Community Preservation Committee (CPC) review this project for funding in the Fall of 2023. Should this project be funded by the CPC and at Town Meeting this project would go out to bid in the Winter of 2024, with construction anticipated to start in the Spring of 2024.

Based on the data collected to date, W & S has indicated that the Town will be able to close this site under the MCP at the conclusion of the construction project until such a time as the Town decides to do more construction work on this site.

Conclusions

While there are still more unknowns on this site that will be investigated by the Town, W & S, and MassDEP in the upcoming weeks, the Town understands that this facility is safe for athletics and recreation activities. The Town will work proactively to make any necessary alterations to the design of the renovation project, with the goal of keeping this project on its original timeline. As in any location, there are always unknowns that could affect the use of this property, but the information available, along with the consultation of W & S, would indicate that the Claxton Field can continue to function as an athletic facility now and into the future.

M E M O R A N D U M

TO: Ed Olsen – Superintendent, Parks and Forestry Division, Carys Lustig – Director of Public Works, Stacey Mulroy – Director of Park and Recreation (Town of Needham)

FROM: Lee Koska, PE, Prasanta Bhunia, LSP (Weston & Sampson)

DATE: March 29, 2023

SUBJECT: Claxton Field Environmental Sampling and Analysis

As requested by the Massachusetts Department of Environmental Protection (MassDEP), Weston & Sampson performed soil sampling and analysis at Claxton Field, located at 1421 Central Avenue (the Site). MassDEP required this sampling because its historical use as a burn dump and a recent resident complaint regarding excavation and stockpiling of topsoil over a portion of the Site for use as a contractor laydown area.

Previous Investigations – 2021 and 2022

As part of a geotechnical investigation to design potential new sports lighting foundations, eleven soil borings were advanced across the Site on December 7, 2021. Ash and various solid waste materials (glass, metal fragments, ceramic and wood) were observed intermixed with granular fill materials underneath topsoil up to 15.5 feet below grade surface (bgs). A significant increase in ash and solid waste materials was observed at four feet bgs and deeper, consistent with the known Site history as a municipal burn dump. During this investigation, samples were not collected for laboratory analysis, but based on field observations (i.e., ash and solid waste in deeper samples), Weston & Sampson recommended shallow test pits to address potential exposure to park users.

On March 15, 2022, Weston & Sampson excavated twenty-one test pits throughout the Site. In general, topsoil throughout the Site was at least 10 to 12 inches thick, transitioning to soil intermixed with solid waste material at greater depths, except for a play yard where 4 to 7 inches of topsoil were identified over a landscaping fabric. As solid waste components (primarily glass) were identified at shallow depths beneath the landscaping fabric, this area was closed as a conservative measure and the playground equipment removed. Samples of the materials were not collected for laboratory analysis at the time of test pit excavations.

Use of a Portion of the Site as Contractor Laydown Area

In the Summer of 2022, the contractor of the Central Avenue Water Main Improvement Project stripped the topsoil from the construction laydown area and stockpiled the material on Site. We understand a resident submitted a complaint to MassDEP, and MassDEP subsequently required soil sampling and analysis to address potential contamination at the Site. As required, a sampling plan was submitted to MassDEP for approval. A summary of the subsurface investigation methodology, findings and recommendations for additional response actions under the MCP are presented below.

Site Investigation – 2023

In March 2023, Weston & Sampson advanced six soil borings (identified as SB-201 through SB-206) using a Geoprobe drill rig. Boring locations are depicted on Figure 1 – Sampling Plan. Soil conditions were logged in the field by an environmental engineer and field screened using a Photoionization Detector (PID) for the presence of Total Organic Vapors (TOV). Three samples were collected from each boring for the following intervals: 0 to 1-foot bgs, 2 to 4 feet bgs and 4 to 6 feet bgs. Location SB-206 encountered refusal (bedrock)

at 5 feet bgs so the third interval sampled was 4 to 5 feet bgs. Samples collected were submitted for laboratory analysis of:

- Polycyclic Aromatic Hydrocarbons (PAHs) via EPA Method 8270;
- MCP 14 Metals via EPA Method 6010 / 7417;
- Asbestos via Polarized Light Microscopy (PLM); and
- Dioxins via EPA Method 8290 (nine samples total).

In addition, one duplicate sample was collected from B-203 from 4 to 6 feet bgs for PAHs, MCP 14 Metals, and Asbestos for quality assurance / quality control (QA/QC) purposes.

One 10-point composite sample was also collected from the stockpile located within the contractor laydown area for laboratory analysis of the same constituents of concern (COCs) identified above. Each grab was collected with hand tools from excavations 1 to 2 feet into the stockpile surface and field screened with a PID. Note that location B-202 was also located within the construction laydown area close to the existing stockpile.

At the request of MassDEP, Weston & Sampson also advanced a series of perimeter borings (PER-1 through PER-8) to visually assess the potential presence of solid waste materials at the park boundaries. These locations were advanced approximately five feet from the existing tree line. Analytical samples were not collected from the PER- boring series. Limited quantities of solid waste components were encountered in all locations with the exception of PER-7, which encountered shallow refusal on bedrock. Boring logs from all locations assessed during this investigation round are presented as Attachment A.

Soil Sampling Results

Topsoil: Twelve inches of topsoil was consistently observed with the exception of location B-206, where ash and solid waste materials were observed at approximately eleven inches bgs. Asbestos containing materials were not detected in topsoil. Laboratory analytical results of topsoil (0 – 1' interval) were below RCS-1 standards with the exception of lead at B-206 (330 mg/kg) and Dioxins at B-203 (30 ng/kg) which slightly exceeded their respective RCS-1 standards of 200 mg/kg and 20 ng/kg, respectively. Based on our visual observations, this exceedance appears to be associated with the presence of solid waste materials and ash at approximately eleven inches bgs. PAHs and Dioxins were below RCS-1 standards in topsoil. PID headspace readings were non-detect in the topsoil material.

Deeper Soil: Deeper soil from 1' to 6' bgs contained solid waste materials (brick, glass, wood, metal, porcelain) and ash intermixed with soil. Elevated concentrations of lead (up to 4,650 mg/kg), zinc (up to 1,630 mg/kg) and various PAHs were detected above RCS-1s. These elevated concentrations were generally detected at depths where ash and solid waste were observed. Similar to topsoil, asbestos was not detected in the submitted samples. PID headspace readings were non-detect in the deeper soil material.

Dioxin 2,3,7,8-TCDD exceeded RCS-1 in 5 of the 6 deeper samples. Note that only 2,3,7,8-TCDD has a published RCS-1 standard under the MCP. The maximum concentration detected was 74 nanograms/kilogram (ng/kg), which is below the Upper Concentration Limit (UCL) of 500 ng/kg and may require removal under the MCP. Full analytical results for all dioxins analyzed are presented in Table 2 – Soil Analytical Results: Dioxins for reference.

Stockpile: Results from the topsoil stockpile sample (CF-Stockpile) included detections of various metals and PAHs, slightly above RCS-1 standards for acenaphthylene, benzo(a)pyrene and lead. Soil results however were generally lower than the concentrations in deeper soil. PID headspace readings were non-detect in the stockpile material.

Based on the data, Weston & Sampson performed a preliminary risk assessment and indicated soil from 0 – 1' bgs does not pose a significant risk for a park user or a resident. However, deeper soil (greater than 1' bgs) does pose a condition of significant risk, mainly due to the presence of lead and to a lesser extent of Dioxin (2,3,7,8-TCDD).

Summary and Recommendations

Concentrations of metals (lead and zinc), PAHs, and Dioxins exceeded RCS-1 standards, which requires a 120-day notification to MassDEP under the MCP. Therefore, the Town should notify MassDEP within this timeframe of their knowledge of the data. Following notification, MassDEP will assign a Release Tracking Number (RTN) and the Site will be regulated going forward under the MCP. Please note that the MCP will require additional response actions, including further assessment, detailed risk characterization and reports for park construction and Site closure.

Attachments:

Figures

Tables

Boring Logs

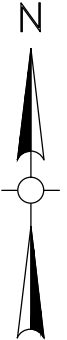
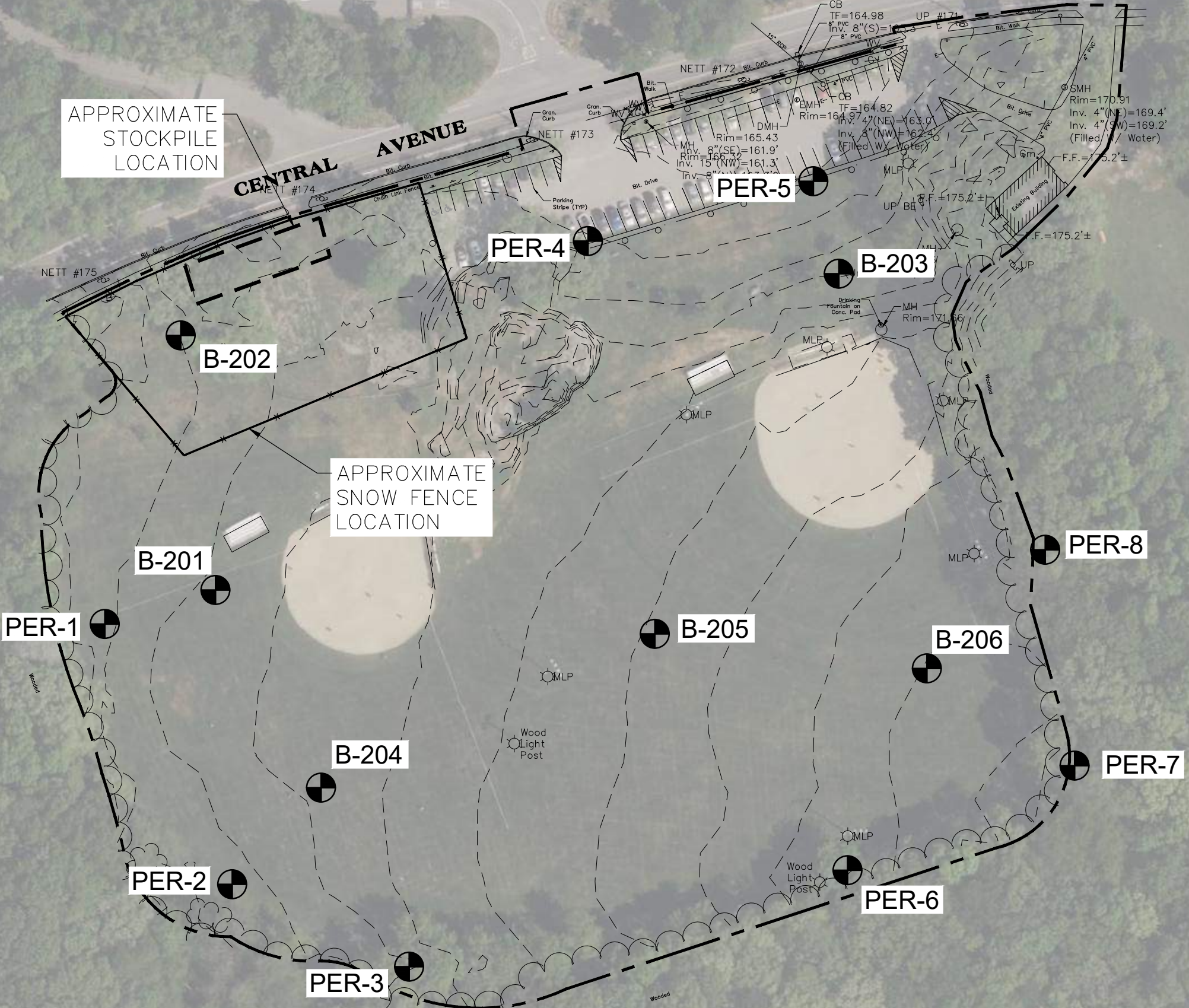
Laboratory Analytical Reports

Figures

APPROXIMATE
STOCKPILE
LOCATION

CENTRAL
AVENUE

APPROXIMATE
SNOW FENCE
LOCATION



LEGEND:

 APPROXIMATE BORING LOCATION

NOTES:

1. STOCKPILE, SNOW FENCE, AND BORING LOCATIONS ARE APPROXIMATE AND FOR DEPICTION PURPOSES ONLY.

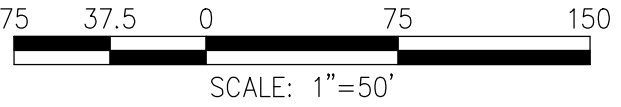


FIGURE 1

NEEDHAM, MA
CLAXTON FIELD

SITE PLAN

DESIGNED BY: MDM CHECKED BY: LK DATE: MARCH 2023



Tables

Soil Analytical Results
Claxton Field
Needham, MA

Parameter	RCS-1 Concentration	Units	Location, Sample Date, Lab Sample ID, Sample Depth (feet)								
			B-201			B-202		B-203			DUPLICATE
			23B0634-01	23B0634-02	23B0634-03	23B0634-04	23B0634-05	23B0634-06	23B0634-07	23B0634-08	23B0634-18
			02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023
			0-1	2-4	4-6	0-1	2-4	0-1	2-4	4-6	4-6
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	0.7	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Acenaphthene	4	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Acenaphthylene	1	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Anthracene	1000	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Benzo(a)anthracene	7	mg/kg	<0.287	0.523	0.827	0.871	<0.307	<0.378	0.457	0.856	0.911
Benzo(a)pyrene	2	mg/kg	<0.287	0.517	0.79	0.85	<0.307	<0.378	0.472	0.911	0.83
Benzo(b)fluoranthene	7	mg/kg	<0.287	0.338	<0.645	0.667	<0.307	<0.378	0.417	0.788	0.802
Benzo(g,h,i)perylene	1000	mg/kg	<0.287	0.402	<0.645	<0.498	<0.307	<0.378	<0.332	0.514	0.428
Benzo(k)fluoranthene	70	mg/kg	<0.287	0.321	<0.645	0.623	<0.307	<0.378	0.378	0.729	0.486
Chrysene	70	mg/kg	<0.287	0.763	1.16	0.975	<0.307	<0.378	0.539	0.961	0.922
Dibenzo(a,h)Anthracene	0.7	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Fluoranthene	1000	mg/kg	<0.287	0.729	0.927	1.82	<0.307	<0.378	0.9	1.59	1.56
Fluorene	1000	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Indeno(1,2,3-cd)Pyrene	7	mg/kg	<0.287	0.319	<0.645	<0.498	<0.307	<0.378	<0.332	0.58	0.492
Naphthalene	4	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Phenanthrene	10	mg/kg	<0.287	0.791	0.663	1.17	<0.307	<0.378	0.546	0.645	0.956
Pyrene	1000	mg/kg	<0.287	1.1	1.49	1.6	<0.307	<0.378	0.752	1.3	1.59
Total Metals											
Antimony	20	mg/kg	<5.03	<5.24	<5.74	<5.10	<5.94	<1.36	<6.18	11.9	<5.62
Arsenic	20	mg/kg	4.84	8.29	5.45	3.13	40.6	8.88	7.17	10.9	8.13
Barium	1000	mg/kg	44.7	409	78	46.3	304	72.5	167	155	287
Beryllium	90	mg/kg	0.29	<0.12	<0.13	0.34	0.27	0.65	0.33	0.63	0.33
Cadmium	70	mg/kg	<0.50	8.91	0.63	<0.51	3.11	<0.68	1.27	<0.63	1.85
Chromium	100	mg/kg	12.7	104	19.5	11.7	35.5	27.1	22.2	8.12	20.2
Lead	200	mg/kg	112	399	302	129	1030	50.2	319	147	455
Mercury	20	mg/kg	0.042	0.271	0.107	0.085	0.647	0.114	0.193	0.37	0.406
Nickel	600	mg/kg	9.46	107	27.8	8.2	32.8	16.5	13.2	18.2	23.6
Selenium	400	mg/kg	<5.03	<1.05	<1.15	<5.10	<1.19	<6.82	<6.18	<6.31	<5.62
Silver	100	mg/kg	<0.5	2.62	<2.87	<0.51	2.97	<0.68	<0.62	<0.63	<0.56
Thallium	8	mg/kg	<5.03	<5.24	<5.74	<5.10	<5.94	<0.68	<6.18	<6.31	<5.62
Vanadium	400	mg/kg	20.8	39.8	13.9	15.4	25.1	34.7	21.9	24.7	18.9
Zinc	1000	mg/kg	63	1630	356	76.8	639	75.1	443	613	926
Dioxins											
2,3,7,8-TCDD TEQ	20	ng/kg	NT	NT	NT	NT	NT	30	74	16	NT
Asbestos											
Total Asbestos	~	%	ND	ND	ND	ND	ND	ND	ND	ND	ND

QC by:

NOTES:

~ = No standard available.

<VALUE = value not detected above laboratory reporting limit

VALUE = value detected above laboratory reporting limit

VALUE = value detected above RCS-1 Criteria

ABBREVIATIONS:

mg/Kg = Milligram per kilogram

ng/kg = Nanograms per kilogram

RCS-1 = Reportable Concentration in Soil, Category S-1 (2014)

TCDD = tetrachlorodibenzo-p-dioxin

ND = Non-detect

NT = Not tested

Soil Analytical Results
Claxton Field
Needham, MA

Parameter	RCS-1 Concentration	Units	Location, Sample Date, Lab Sample ID, Sample Depth (feet)									
			B-204			B-205			B-206			CF-STOCKPILE
			23B0634-09	23B0634-10	23B0634-11	23B0634-12	23B0634-13	23B0634-14	23B0634-15	23B0634-16	23B0634-17	23B0634-19
			02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023
			0-1	2-4	4-6	0-1	2-4	4-6	0-1	2-4	4-5	N/A
Polycyclic Aromatic Hydrocarbons (PAHs)												
2-Methylnaphthalene	0.7	mg/kg	<0.295	<0.255	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	<0.338
Acenaphthene	4	mg/kg	<0.295	<0.255	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	<0.338
Acenaphthylene	1	mg/kg	<0.295	1.56	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	1.46
Anthracene	1000	mg/kg	<0.295	0.601	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	0.891
Benzo(a)anthracene	7	mg/kg	<0.295	2.29	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	2.36
Benzo(a)pyrene	2	mg/kg	<0.295	2.99	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	2.19
Benzo(b)fluoranthene	7	mg/kg	<0.295	1.96	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	1.85
Benzo(g,h,i)perylene	1000	mg/kg	<0.295	1.77	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	1.32
Benzo(k)fluoranthene	70	mg/kg	<0.295	1.99	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	1.4
Chrysene	70	mg/kg	<0.295	3.55	<0.319	<0.295	0.318	<0.346	<0.315	<0.284	<0.263	2.69
Dibenzo(a,h)Anthracene	0.7	mg/kg	<0.295	0.447	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	<0.338
Fluoranthene	1000	mg/kg	<0.295	2.89	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	3.92
Fluorene	1000	mg/kg	<0.295	<0.255	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	0.487
Indeno(1,2,3-cd)Pyrene	7	mg/kg	<0.295	1.7	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	1.42
Naphthalene	4	mg/kg	<0.295	<0.255	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	<0.338
Phenanthrene	10	mg/kg	<0.295	1.77	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	4.14
Pyrene	1000	mg/kg	<0.295	5.05	<0.319	<0.295	0.36	<0.346	<0.315	<0.284	<0.263	4.57
Total Metals												
Antimony	20	mg/kg	<5.79	<4.89	14.7	<5.61	<5.45	<5.85	<5.86	6.85	<4.98	<6.4
Arsenic	20	mg/kg	<2.89	<2.45	8.31	<2.81	3.15	10.6	5.03	13.9	<2.49	4.97
Barium	1000	mg/kg	31.8	23.7	336	23.7	47.9	155	104	85.9	57.2	88.7
Beryllium	90	mg/kg	0.32	0.18	<0.14	0.25	0.25	0.67	0.39	0.33	0.34	0.26
Cadmium	70	mg/kg	<0.58	<0.49	3.05	<0.56	<0.55	<0.58	<0.59	<0.53	<0.5	0.7
Chromium	100	mg/kg	14.1	14	88.3	14.5	14.9	10.4	17.4	16	12	14
Lead	200	mg/kg	14.6	19.1	4650	22.1	50.6	1650	330	319	<9.97	206
Mercury	20	mg/kg	0.061	0.091	0.145	0.065	0.409	0.654	0.088	0.223	0.034	0.433
Nickel	600	mg/kg	9.64	7.33	68.7	8.15	12	16.8	16.4	37.4	8.75	9.97
Selenium	400	mg/kg	<5.79	<4.89	<1.15	<5.61	<5.45	<5.83	<5.86	<1.06	<4.98	<6.4
Silver	100	mg/kg	<0.58	<0.49	<5.76	<0.56	<0.55	<0.58	<0.59	<1.06	<0.5	<0.64
Thallium	8	mg/kg	<5.79	<4.89	<5.76	<5.61	<5.45	<5.83	<5.86	<5.3	<4.98	<6.4
Vanadium	400	mg/kg	25.3	17.4	23.8	18.7	35.1	38.2	24.3	21.5	21.7	17.2
Zinc	1000	mg/kg	32.7	35.5	1120	29.2	69	329	199	341	24.9	199
Dioxins												
2,3,7,8-TCDD TEQ	20	ng/kg	5.2	62	27	3.4	54	27	NT	NT	NT	NT
Asbestos												
Total Asbestos	~	%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

QC by:

NOTES:

- ~ = No standard available.
- <VALUE = value not detected above laboratory reporting lim
- VALUE = value detected above laboratory reporting limit
- VALUE = value detected above RCS-1 Criteria

ABBREVIATIONS:

- mg/Kg = Milligram per kilogram
- ng/kg = Nanograms per kilogram
- RCS-1 = Reportable Concentration in Soil, Category S-1 (2014)
- TCDD = tetrachlorodibenzo-p-dioxin
- ND = Non-detect
- NT = Not tested

Table 2
Soil Analytical Results: Dioxins
Claxton Field
Needham, MA

Parameter	MCP Method 1 Standards		Units	Sample ID, Sample Date, Sample Depth (feet)								
	S-1/GW-2	S-1/GW-3		B-203			B-204			B-205		
				2/16/2023 0-1	2/16/2023 2-4	2/16/2023 4-6	2/16/2023 0-1	2/16/2023 2-4	2/16/2023 4-6	2/16/2023 0-1	2/16/2023 2-4	2/16/2023 4-6
Dioxins												
2,3,7,8-TCDF	~	~	ng/Kg	0.99	1.9	3.7	0.49	2.8	6.3	< 0.29	34	8.5
Total TCDF	~	~	ng/Kg	12	33	48	7.0	140	170	2.8	560	300
2,3,7,8-TCDD	~	~	ng/Kg	0.54	0.46	0.39	0.21	0.28	0.51	< 0.069	3.3	0.69
Total TCDD	~	~	ng/Kg	5.8	13	14	1.7	30	21	<0.069	120	26
1,2,3,7,8-PeCDF	~	~	ng/Kg	1.3	1.6	2.1	0.57	47	5.1	< 0.23	9.6	4.7
2,3,4,7,8-PeCDF	~	~	ng/Kg	2.1	2.7	3.2	1.1	14	9.9	0.35	22	11
Total PeCDF	~	~	ng/Kg	28	29	37	18	140	110	7.3	230	130
1,2,3,7,8-PeCDD	~	~	ng/Kg	4.8	2.0	0.89	0.39	1.5	1.3	0.19	3.1	1.4
Total PeCDD	~	~	ng/Kg	16	16	14	3.0	35	21	1.0	51	19
1,2,3,4,7,8-HxCDF	~	~	ng/Kg	3.8	2.2	3.2	0.81	9.3	8.0	0.53	6.2	5.8
1,2,3,6,7,8-HxCDF	~	~	ng/Kg	4.1	1.2	2.7	0.67	9.1	6.4	0.37	5.6	5.4
2,3,4,6,7,8-HxCDF	~	~	ng/Kg	2.2	2.4	3.1	1.2	12	7.9	0.49	8.7	7.0
1,2,3,7,8,9-HxCDF	~	~	ng/Kg	0.77	0.92	0.92	0.51	2.6	2.5	0.29	1.5	1.0
Total HxCDF	~	~	ng/Kg	54	53	36	16	120	81	7.4	110	74
1,2,3,4,7,8-HxCDD	~	~	ng/Kg	5.5	2.6	1.3	0.50	1.9	1.2	0.39	1.4	1.3
1,2,3,6,7,8-HxCDD	~	~	ng/Kg	9.3	17	2.6	1.1	3.4	2.6	0.66	3.3	0.80
1,2,3,7,8,9-HxCDD	~	~	ng/Kg	9	8.2	1.9	0.80	2.1	1.9	0.52	2.6	0.53
Total HxCDD	~	~	ng/Kg	74	120	27	9.3	56	28	6.7	42	11
1,2,3,4,6,7,8-HpCDF	~	~	ng/Kg	25	39	22	6.7	120	26	3.4	46	33
1,2,3,4,7,8,9-HpCDF	~	~	ng/Kg	1.6	2.8	1.2	0.48	1.7	2.8	< 0.11	1.4	0.63
Total HpCDF	~	~	ng/Kg	60	180	40	12	130	42	6.8	57	37
1,2,3,4,6,7,8-HpCDD	~	~	ng/Kg	120	500	41	12	22	33	16	19	3.3
Total HpCDD	~	~	ng/Kg	310	940	82	24	56	59	32	39	7.5
OCDF	~	~	ng/Kg	45	83	18	6.6	25	14	5.0	24	4.0
OCDD	~	~	ng/Kg	1600	3700	270	95	160	160	140	80	10
TCDD TEQ	20	20	ng/Kg	30	74	16	5.2	62	27	3.4	54	27

NOTES:

~ = No standard available.

<VALUE = value not detected above laboratory reporting limit

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VALUE = value detected above RCS-1 Criteria

ABBREVIATIONS:

ng/kg = Nanograms per kilogram

RCS-1 = Reportable Concentration in Soil, Category S-1 (2014)

TCDD TEQ = Total 2,3,7,8-TCDD Toxic Equivalent Using MADEP Factors

Boring Logs

		PROJECT Claxton Field Needham, MA		BORING No. <u>B-201-2</u>																										
		SHEET <u>1</u> OF <u>1</u> Project No. <u>ENG23-0164</u> CHKD BY <u>ACE</u>																												
BORING Co. <u>Bronson Drilling</u> FOREMAN <u>Dan Bronson</u> WSE REP. <u>Matthew McGuire, Laura McGovern</u>		BORING LOCATION <u>See attached plan</u> GROUND SURFACE ELEV. <u>NR</u> DATUM <u>NR</u> DATE START <u>2/16/23</u> DATE END <u>2/16/23</u>																												
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0	NA	S-1	20/72	0-6	NA	0.0	0"-12" Dark brown F SAND with some silt, trace organics; moist	(1)	TOPSOIL																					
2							12'-72" Light brown F-C SAND with some gravel, some ash, trace debris (glass, porcelain); moist		FILL																					
4																														
6							End of Boring at 6'																							
8																														
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GRANULAR SOILS		COHESIVE SOILS		NOTES: 1. Samples B-206 (0-1), B-206 (2-4), and B-206 (4-6) collected across B-206-1 and B-206-2 for PAHs, MCP 14 metals, and asbestos.																										
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BORING Co. <u>Bronson Drilling</u>		BORING LOCATION <u>See attached plan</u>			
FOREMAN <u>Dan Bronson</u>		GROUND SURFACE ELEV. <u>NR</u> DATUM <u>NR</u>			
WSE REP. <u>Matthew McGuire, Laura McGovern</u>		DATE START <u>2/16/23</u> DATE END <u>2/16/23</u>			

SAMPLER: <u>Geoprobe</u>		GROUNDWATER OBSERVATIONS				
CASING:	<u>2" inside diameter with 5' sleeve</u>	DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
		<u>2/16/23</u>	<u>NR</u>	<u>NR</u>	<u>NA</u>	<u>NA</u>
CASING SIZE:	<u>2"</u> OTHER: _____					

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft.)	BLOWS/6"				
0	NA						0"-12" Light to dark brown F-M SAND with some silt, trace organics; moist		TOPSOIL
2		S-1	31/72	0-6	NA	0.0	12"-36" Light to dark brown F-C SAND with some gravel; moist	(1)	FILL
	36"-42" Light brown C SAND with trace gravel								
4							42"-66" Dark brown to black F-C SAND, some gravel, some glass, trace brick; moist		
6							66"-72" White ASH, trace glass; moist		
							End of Boring at 6'		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS		NOTES: 1. Samples B-204 (0-1), B-204 (2-4), and B-204 (4-6) collected across B-204-1 and B-204-2 for PAHs, MCP 14 metals, asbestos, and dioxins.
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	
0-4	V. LOOSE	0-2	V. SOFT	
4-10	LOOSE	2-4	SOFT	
10-30	M. DENSE	4-8	M. STIFF	
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 FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. B-204-2

		PROJECT Claxton Field Needham, MA		BORING No. <u>B-205-1</u>																					
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BORING Co. <u>Bronson Drilling</u> FOREMAN <u>Dan Bronson</u> WSE REP. <u>Matthew McGuire, Laura McGovern</u>		BORING LOCATION <u>See attached plan</u> GROUND SURFACE ELEV. <u>NR</u> DATUM <u>NR</u> DATE START <u>2/16/23</u> DATE END <u>2/16/23</u>																							
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2							12"-27" Tan to light brown F-M SAND with some silt, trace gravel, trace brick; moist																		
4							27"-55" Gray to black F-C SAND with some ash, little brick, trace glass; moist																		
6							55"-61" Light gray F-C SAND with some white ash, little gravel; moist																		
8							61"-66" Dark orange F-C SAND with some gravel, some brick, trace glass; moist																		
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		PROJECT Claxton Field Needham, MA	BORING No <u>B-206-1</u> SHEET <u>1</u> OF <u>1</u> Project No. <u>ENG23-0164</u> CHKD BY _____																				
BORING Co. <u>Bronson Drilling</u> FOREMAN <u>Dan Bronson</u> WSE REP. <u>Matthew McGuire, Laura McGovern</u>		BORING LOCATION <u>See attached plan</u> GROUND SURFACE ELEV. <u>NR</u> DATUM <u>NR</u> DATE START <u>2/16/23</u> DATE END <u>2/16/23</u>																					
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DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION														
0	NA	S-1	29/60	0-5	NA	0.0	0"-11" Light to dark brown F-M SAND with some silt, trace organics; moist	(2)	TOPSOIL														
2	11"-24" Light brown F-C SAND with some silt, trace gravel; moist						FILL																
	24"-30" Dark orange F-C SAND, some ash, trace brick; moist																						
	30"-36" Light brown F-M SAND, some silt, some gravel																						
4	36"-60" Light gray to light brown F-C SAND with some gravel; moist																						
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GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Refusal at 5' (suspect bedrock).

2. Samples B-206 (0-1), B-206 (2-4), and B-206 (4-6) collected across B-206-1 and B-206-2 for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. B-206-1

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2							20"-36" Light brown to gray F-C SAND, some gravel, trace silt; moist																							
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BORING Co. <u>Bronson Drilling</u>		BORING LOCATION <u>See attached plan</u>	
FOREMAN <u>Dan Bronson</u>		GROUND SURFACE ELEV. <u>NR</u> DATUM <u>NR</u>	
WSE REP. <u>Matthew McGuire, Laura McGovern</u>		DATE START <u>2/16/23</u> DATE END <u>2/16/23</u>	

SAMPLER: <u>Geoprobe</u>		GROUNDWATER OBSERVATIONS				
CASING: <u>2" inside diameter with 5' sleeve</u>		DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
		2/16/23	NR	NR	NA	NA
CASING SIZE: <u>2"</u>	OTHER: _____					

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft.)	BLOWS/6"				
0	NA						0"-18" Light to dark brown F SAND with some silt, trace roots; moist		TOPSOIL
2		S-1	27/72	0-6	NA	NR	18"-36" Light to dark brown F-M SAND with some silt, trace gravel; moist		
4							36"-46" Gray to light brown C SAND with some gravel, trace silt; moist		
6							46"-72" Dark brown to gray F-C SAND with some gravel, some ash, some silt, trace glass; moist		
8							End of Boring at 6'		
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS		NOTES:
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	
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4-10	LOOSE	2-4	SOFT	
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		PROJECT Claxton Field Needham, MA		BORING No. <u>PER-7</u>	
				SHEET <u>1</u> OF <u>1</u> Project No. <u>ENG23-0164</u> CHKD BY <u>ACE</u>	

BORING Co. <u>Bronson Drilling</u>		BORING LOCATION <u>See attached plan</u>	
FOREMAN <u>Dan Bronson</u>		GROUND SURFACE ELEV. <u>NR</u> DATUM <u>NR</u>	
WSE REP. <u>Matthew McGuire, Laura McGovern</u>		DATE START <u>2/16/23</u> DATE END <u>2/16/23</u>	

SAMPLER: <u>Geoprobe</u>		GROUNDWATER OBSERVATIONS				
CASING:	<u>2" inside diameter with 5' sleeve</u>	DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
		<u>2/16/23</u>	<u>NR</u>	<u>NR</u>	<u>NA</u>	<u>NA</u>
CASING SIZE:	<u>2"</u> OTHER: _____					

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft.)	BLOWS/6"				
0	NA	S-1	13/24	0-2	NA	NR	0"-12" Light to dark brown F SAND with some silt, trace roots; moist		TOPSOIL
2							12"-24" Tan F-M SAND, some rock, little silt; fractured rock starting at 20"		FILL
4							End of Boring at 2' (Refusal)		
6									
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

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	BORING No. <u>PER-5</u>
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		PROJECT Claxton Field Needham, MA		BORING No. <u>PER-8</u>	
				SHEET <u>1</u> OF <u>1</u> Project No. <u>ENG23-0164</u> CHKD BY <u>ACE</u>	

BORING Co. <u>Bronson Drilling</u>		BORING LOCATION <u>See attached plan</u>	
FOREMAN <u>Dan Bronson</u>		GROUND SURFACE ELEV. <u>NR</u> DATUM <u>NR</u>	
WSE REP. <u>Matthew McGuire, Laura McGovern</u>		DATE START <u>2/16/23</u> DATE END <u>2/16/23</u>	

SAMPLER: <u>Geoprobe</u>		GROUNDWATER OBSERVATIONS				
CASING:	<u>2" inside diameter with 5' sleeve</u>	DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
		<u>2/16/23</u>	<u>NR</u>	<u>NR</u>	<u>NA</u>	<u>NA</u>
CASING SIZE:	<u>2"</u>	OTHER: _____				

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft.)	BLOWS/6"				
0	NA						0"-12" Light to dark brown F SAND with some silt, trace roots; moist		TOPSOIL
2		S-1	21/72	0-6	NA	NR	12"-72" Black F-M SAND, little organics, little silt, little rock, little debris (glass and metal)		FILL
4									
6									
8							End of Boring at 6'		
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

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	BORING No. <u>PER-5</u>
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Laboratory Analytical Reports



CERTIFICATE OF ANALYSIS

Lee Koska
Weston and Sampson Engineers, Inc.
5 Centennial Drive
Peabody, MA 01960

RE: Claxton Field (N/A)
ESS Laboratory Work Order Number: 23B0634

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 4:37 pm, Mar 14, 2023

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

Aerobiology Boston - Woburn, MA
Pace Analytical, Inc. - Minneapolis, MN

Asbestos
Dioxin



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

SAMPLE RECEIPT

The following samples were received on February 17, 2023 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
23B0634-01	B-201 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-02	B-201 - 2-4	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-03	B-201 - 4-6	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-04	B-202 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-05	B-202 - 2-4	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-06	B-203 - 0-1	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-07	B-203 - 2-4	Soil	6010C, 7471B, 8270D, SUB
23B0634-08	B-203 - 4-6	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-09	B-204 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-10	B-204 - 2-4	Soil	6010C, 7471B, 8270D, SUB
23B0634-11	B-204 - 4-6	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-12	B-205 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-13	B-205 - 2-4	Soil	6010C, 7471B, 8270D, SUB
23B0634-14	B-205 - 4-6	Soil	6010C, 7471B, 8270D, SUB
23B0634-15	B-206 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-16	B-206 - 2-4	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-17	B-206 - 4-5	Soil	6010C, 7471B, 8270D, SUB
23B0634-18	B-207F - 4-6	Soil	6010C, 7471B, 8270D, SUB
23B0634-19	CF-STOCKPILE	Soil	6010C, 7471B, 8270D, SUB



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

PROJECT NARRATIVE

Total Metals

23B0634-02 [Elevated Method Reporting Limits due to sample matrix \(EL\).](#)
Silver

23B0634-05 [Elevated Method Reporting Limits due to sample matrix \(EL\).](#)
Silver

23B0634-11 [Elevated Method Reporting Limits due to sample matrix \(EL\).](#)
Silver

23B0634-16 [Elevated Method Reporting Limits due to sample matrix \(EL\).](#)
Silver

23B0634-17 [Elevated Method Reporting Limits due to sample matrix \(EL\).](#)
Lead

DB32002-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)
Cadmium (79% @ 80-120%), Selenium (79% @ 80-120%), Zinc (77% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **23B0634-01 through 23B0634-19**

Matrices: ☐ Ground Water/Surface Water ☒ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other: _____

CAM Protocol (check all that apply below):

☐ 8260 VOC CAM II A	☒ 7470/7471 Hg CAM III B	☐ MassDEP VPH (GC/PID/FID) CAM IV A	☐ 8082 PCB CAM V A	☐ 9014 Total Cyanide/PAC CAM VI A	☐ 6860 Perchlorate CAM VIII B
☒ 8270 SVOC CAM II B	☐ 7010 Metals CAM III C	☐ MassDEP VPH (GC/MS) CAM IV C	☐ 8081 Pesticides CAM V B	☐ 7196 Hex Cr CAM VI B	☐ MassDEP APH CAM IX A
☒ 6010 Metals CAM III A	☒ 6020 Metals CAM III D	☐ MassDEP EPH CAM IV B	☐ 8151 Herbicides CAM V C	☐ Explosives CAM VIII A	☐ TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes ☒ No ☐
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes ☒ No ☐
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes ☒ No ☐
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes ☒ No ☐
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ☐ No ☐
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes ☒ No ☐

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.	Yes ☐ No ☒ *
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	Yes ☐ No ☒ *
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ☐ No ☒ *

***All negative responses must be addressed in an attached laboratory narrative.**

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard

Printed Name: Laurel Stoddard

Date: March 14, 2023

Position: Laboratory Director



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 0-1
Date Sampled: 02/16/23 10:45
Percent Solids: 86

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.03)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Arsenic	4.84 (2.52)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Barium	44.7 (2.52)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Beryllium	0.29 (0.11)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Cadmium	ND (0.50)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Chromium	12.7 (1.01)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Lead	112 (5.03)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Mercury	0.042 (0.033)		7471B		1	YIV	02/23/23 10:41	0.69	40	DB32003
Nickel	9.46 (2.52)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Selenium	ND (5.03)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Silver	ND (0.50)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Thallium	ND (5.03)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Vanadium	20.8 (1.01)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Zinc	63.0 (2.52)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 0-1
Date Sampled: 02/16/23 10:45
Percent Solids: 86
Initial Volume: 20.2g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Acenaphthene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Acenaphthylene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Anthracene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(a)anthracene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(a)pyrene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Chrysene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Fluoranthene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Fluorene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Naphthalene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Phenanthrene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Pyrene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	67 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	73 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	69 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	89 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-201 - 0-1

Date Sampled: 02/16/23 10:45

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-01

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 2-4
Date Sampled: 02/16/23 10:45
Percent Solids: 84

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.24)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Arsenic	8.29 (2.62)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Barium	409 (2.62)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Beryllium	ND (0.12)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Cadmium	8.91 (0.52)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Chromium	104 (5.24)		6010C		5	CEV	02/22/23 16:19	2.27	100	DB32002
Lead	399 (26.2)		6010C		5	CEV	02/22/23 16:19	2.27	100	DB32002
Mercury	0.271 (0.039)		7471B		1	YIV	02/23/23 10:43	0.61	40	DB32003
Nickel	107 (2.62)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Selenium	ND (1.05)		6020A		1	BJV	02/23/23 16:50	2.27	100	DB32002
Silver	EL ND (2.62)		6010C		5	CEV	02/22/23 16:19	2.27	100	DB32002
Thallium	ND (5.24)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Vanadium	39.8 (1.05)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Zinc	1630 (26.2)		6010C		10	CEV	02/22/23 16:17	2.27	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 2-4
Date Sampled: 02/16/23 10:45
Percent Solids: 84
Initial Volume: 19.7g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Acenaphthene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Acenaphthylene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Anthracene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(a)anthracene	0.523 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(a)pyrene	0.517 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(b)fluoranthene	0.338 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(g,h,i)perylene	0.402 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(k)fluoranthene	0.321 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Chrysene	0.763 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Fluoranthene	0.729 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Fluorene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	0.319 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Naphthalene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Phenanthrene	0.791 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Pyrene	1.10 (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	67 %		30-130
Surrogate: 2-Fluorobiphenyl	78 %		30-130
Surrogate: Nitrobenzene-d5	69 %		30-130
Surrogate: p-Terphenyl-d14	85 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 2-4
Date Sampled: 02/16/23 10:45

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-02
Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 4-6
Date Sampled: 02/16/23 10:45
Percent Solids: 79

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.74)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Arsenic	5.45 (2.87)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Barium	78.0 (2.87)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Beryllium	ND (0.13)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Cadmium	0.63 (0.57)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Chromium	19.5 (5.74)		6010C		5	CEV	02/23/23 10:36	2.2	100	DB32002
Lead	302 (28.7)		6010C		5	CEV	02/23/23 10:36	2.2	100	DB32002
Mercury	0.107 (0.036)		7471B		1	YIV	02/23/23 10:45	0.69	40	DB32003
Nickel	27.8 (2.87)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Selenium	ND (1.15)		6020A		1	BJV	02/23/23 16:56	2.2	100	DB32002
Silver	ND (2.87)		6010C		5	CEV	02/23/23 10:36	2.2	100	DB32002
Thallium	ND (5.74)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Vanadium	13.9 (1.15)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Zinc	356 (2.87)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 4-6
Date Sampled: 02/16/23 10:45
Percent Solids: 79
Initial Volume: 19.6g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Acenaphthene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Acenaphthylene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Anthracene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(a)anthracene	0.827 (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(a)pyrene	0.790 (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Chrysene	1.16 (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Fluoranthene	0.927 (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Fluorene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Naphthalene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Phenanthrene	0.663 (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Pyrene	1.49 (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	80 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	87 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	80 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	89 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-201 - 4-6

Date Sampled: 02/16/23 10:45

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-03

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 0-1
Date Sampled: 02/16/23 10:15
Percent Solids: 97

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.10)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Arsenic	3.13 (2.55)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Barium	46.3 (2.55)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Beryllium	0.34 (0.11)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Cadmium	ND (0.51)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Chromium	11.7 (1.02)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Lead	129 (5.10)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Mercury	0.085 (0.030)		7471B		1	YIV	02/23/23 10:51	0.69	40	DB32003
Nickel	8.20 (2.55)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Selenium	ND (5.10)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Silver	ND (0.51)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Thallium	ND (5.10)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Vanadium	15.4 (1.02)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Zinc	76.8 (2.55)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 0-1
Date Sampled: 02/16/23 10:15
Percent Solids: 97
Initial Volume: 20.8g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Acenaphthene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Acenaphthylene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Anthracene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(a)anthracene	0.871 (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(a)pyrene	0.850 (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(b)fluoranthene	0.667 (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(k)fluoranthene	0.623 (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Chrysene	0.975 (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Fluoranthene	1.82 (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Fluorene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Naphthalene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Phenanthrene	1.17 (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Pyrene	1.60 (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	77 %		30-130
Surrogate: 2-Fluorobiphenyl	83 %		30-130
Surrogate: Nitrobenzene-d5	82 %		30-130
Surrogate: p-Terphenyl-d14	86 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-202 - 0-1

Date Sampled: 02/16/23 10:15

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-04

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 2-4
Date Sampled: 02/16/23 10:15
Percent Solids: 79

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.94)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Arsenic	40.6 (2.97)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Barium	304 (2.97)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Beryllium	0.27 (0.13)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Cadmium	3.11 (0.59)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Chromium	35.5 (5.94)		6010C		5	CEV	02/23/23 10:38	2.14	100	DB32002
Lead	1030 (29.7)		6010C		5	CEV	02/23/23 10:38	2.14	100	DB32002
Mercury	0.647 (0.040)		7471B		1	YIV	02/23/23 10:54	0.63	40	DB32003
Nickel	32.8 (2.97)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Selenium	ND (1.19)		6020A		1	BJV	02/23/23 17:01	2.14	100	DB32002
Silver	EL ND (2.97)		6010C		5	CEV	02/23/23 10:38	2.14	100	DB32002
Thallium	ND (5.94)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Vanadium	25.1 (1.19)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Zinc	639 (2.97)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 2-4
Date Sampled: 02/16/23 10:15
Percent Solids: 79
Initial Volume: 20.7g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Acenaphthene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Acenaphthylene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Anthracene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(a)anthracene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(a)pyrene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Chrysene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Fluoranthene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Fluorene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Naphthalene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Phenanthrene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Pyrene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	73 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	79 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	75 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	86 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-202 - 2-4

Date Sampled: 02/16/23 10:15

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-05

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 0-1
Date Sampled: 02/16/23 13:30
Percent Solids: 68

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (1.36)		6020A		1	BJV	02/23/23 17:07	2.14	100	DB32002
Arsenic	8.88 (3.41)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Barium	72.5 (3.41)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Beryllium	0.65 (0.30)		6010C		2	CEV	02/22/23 16:21	2.14	100	DB32002
Cadmium	ND (0.68)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Chromium	27.1 (1.36)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Lead	50.2 (6.82)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Mercury	0.114 (0.048)		7471B		1	YIV	02/23/23 10:56	0.6	40	DB32003
Nickel	16.5 (3.41)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Selenium	ND (6.82)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Silver	ND (0.68)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Thallium	ND (0.68)		6020A		1	BJV	02/23/23 17:07	2.14	100	DB32002
Vanadium	34.7 (1.36)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Zinc	75.1 (3.41)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 0-1
Date Sampled: 02/16/23 13:30
Percent Solids: 68
Initial Volume: 19.3g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Acenaphthene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Acenaphthylene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Anthracene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(a)anthracene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(a)pyrene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Chrysene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Fluoranthene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Fluorene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Naphthalene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Phenanthrene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Pyrene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>74 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>78 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>79 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>88 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-203 - 0-1

Date Sampled: 02/16/23 13:30

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-06

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 2-4
Date Sampled: 02/16/23 13:30
Percent Solids: 79

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (6.18)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Arsenic	7.17 (3.09)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Barium	167 (3.09)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Beryllium	0.33 (0.14)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Cadmium	1.27 (0.62)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Chromium	22.2 (1.24)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Lead	319 (6.18)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Mercury	0.193 (0.036)		7471B		1	YIV	02/23/23 10:58	0.69	40	DB32003
Nickel	13.2 (3.09)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Selenium	ND (6.18)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Silver	ND (0.62)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Thallium	ND (6.18)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Vanadium	21.9 (1.24)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Zinc	443 (3.09)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 2-4
Date Sampled: 02/16/23 13:30
Percent Solids: 79
Initial Volume: 19.1g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Acenaphthene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Acenaphthylene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Anthracene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(a)anthracene	0.457 (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(a)pyrene	0.472 (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(b)fluoranthene	0.417 (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(k)fluoranthene	0.378 (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Chrysene	0.539 (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Fluoranthene	0.900 (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Fluorene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Naphthalene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Phenanthrene	0.546 (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Pyrene	0.752 (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	78 %		30-130
Surrogate: 2-Fluorobiphenyl	83 %		30-130
Surrogate: Nitrobenzene-d5	79 %		30-130
Surrogate: p-Terphenyl-d14	85 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-203 - 2-4

Date Sampled: 02/16/23 13:30

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-07

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 4-6
Date Sampled: 02/16/23 13:30
Percent Solids: 77

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	11.9 (1.26)		6020A		1	BJV	02/23/23 17:13	2.05	100	DB32002
Arsenic	10.9 (3.16)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Barium	155 (3.16)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Beryllium	0.63 (0.14)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Cadmium	ND (0.63)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Chromium	8.12 (1.26)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Lead	147 (6.31)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Mercury	0.370 (0.043)		7471B		1	YIV	02/23/23 11:00	0.6	40	DB32003
Nickel	18.2 (3.16)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Selenium	ND (6.31)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Silver	ND (0.63)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Thallium	ND (6.31)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Vanadium	24.7 (1.26)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Zinc	613 (3.16)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 4-6
Date Sampled: 02/16/23 13:30
Percent Solids: 77
Initial Volume: 19.6g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Acenaphthene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Acenaphthylene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Anthracene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(a)anthracene	0.856 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(a)pyrene	0.911 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(b)fluoranthene	0.788 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(g,h,i)perylene	0.514 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(k)fluoranthene	0.729 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Chrysene	0.961 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Fluoranthene	1.59 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Fluorene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	0.580 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Naphthalene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Phenanthrene	0.645 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Pyrene	1.30 (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	76 %		30-130
Surrogate: 2-Fluorobiphenyl	81 %		30-130
Surrogate: Nitrobenzene-d5	78 %		30-130
Surrogate: p-Terphenyl-d14	83 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-203 - 4-6

Date Sampled: 02/16/23 13:30

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-08

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 0-1
Date Sampled: 02/16/23 12:00
Percent Solids: 81

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.79)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Arsenic	ND (2.89)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Barium	31.8 (2.89)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Beryllium	0.32 (0.13)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Cadmium	ND (0.58)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Chromium	14.1 (1.16)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Lead	14.6 (5.79)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Mercury	0.061 (0.035)		7471B		1	YIV	02/23/23 11:02	0.69	40	DB32003
Nickel	9.64 (2.89)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Selenium	ND (5.79)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Silver	ND (0.58)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Thallium	ND (5.79)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Vanadium	25.3 (1.16)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Zinc	32.7 (2.89)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 0-1
Date Sampled: 02/16/23 12:00
Percent Solids: 81
Initial Volume: 20.9g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Acenaphthene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Acenaphthylene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Anthracene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(a)anthracene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(a)pyrene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Chrysene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Fluoranthene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Fluorene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Naphthalene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Phenanthrene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Pyrene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	74 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	78 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	76 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	87 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-204 - 0-1

Date Sampled: 02/16/23 12:00

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-09

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 2-4
Date Sampled: 02/16/23 12:00
Percent Solids: 96

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (4.89)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Arsenic	ND (2.45)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Barium	23.7 (2.45)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Beryllium	0.18 (0.11)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Cadmium	ND (0.49)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Chromium	14.0 (0.98)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Lead	19.1 (4.89)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Mercury	0.091 (0.030)		7471B		1	YIV	02/23/23 11:04	0.69	40	DB32003
Nickel	7.33 (2.45)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Selenium	ND (4.89)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Silver	ND (0.49)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Thallium	ND (4.89)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Vanadium	17.4 (0.98)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Zinc	35.5 (2.45)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 2-4
Date Sampled: 02/16/23 12:00
Percent Solids: 96
Initial Volume: 20.5g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Acenaphthene	ND (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Acenaphthylene	1.56 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Anthracene	0.601 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(a)anthracene	2.29 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(a)pyrene	2.99 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(b)fluoranthene	1.96 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(g,h,i)perylene	1.77 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(k)fluoranthene	1.99 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Chrysene	3.55 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Dibenzo(a,h)Anthracene	0.447 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Fluoranthene	2.89 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Fluorene	ND (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	1.70 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Naphthalene	ND (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Phenanthrene	1.77 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Pyrene	5.05 (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	75 %		30-130
Surrogate: 2-Fluorobiphenyl	81 %		30-130
Surrogate: Nitrobenzene-d5	80 %		30-130
Surrogate: p-Terphenyl-d14	85 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 2-4
Date Sampled: 02/16/23 12:00

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-10
Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 4-6
Date Sampled: 02/16/23 12:00
Percent Solids: 78

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-11
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	14.7 (1.15)		6020A		1	BJV	02/23/23 17:18	2.24	100	DB32002
Arsenic	8.31 (2.88)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Barium	336 (2.88)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Beryllium	ND (0.13)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Cadmium	3.05 (0.58)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Chromium	88.3 (11.5)		6010C		10	CEV	02/22/23 16:23	2.24	100	DB32002
Lead	4650 (57.6)		6010C		10	CEV	02/22/23 16:23	2.24	100	DB32002
Mercury	0.145 (0.039)		7471B		1	YIV	02/23/23 11:18	0.65	40	DB32003
Nickel	68.7 (2.88)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Selenium	ND (1.15)		6020A		1	BJV	02/23/23 17:18	2.24	100	DB32002
Silver	EL ND (5.76)		6010C		10	CEV	02/22/23 16:23	2.24	100	DB32002
Thallium	ND (5.76)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Vanadium	23.8 (1.15)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Zinc	1120 (2.88)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 4-6
Date Sampled: 02/16/23 12:00
Percent Solids: 78
Initial Volume: 20.2g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Acenaphthene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Acenaphthylene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Anthracene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(a)anthracene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(a)pyrene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Chrysene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Fluoranthene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Fluorene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Naphthalene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Phenanthrene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Pyrene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>83 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>86 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>84 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>85 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 4-6
Date Sampled: 02/16/23 12:00

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-11
Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 0-1
Date Sampled: 02/16/23 14:30
Percent Solids: 87

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-12
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.61)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Arsenic	ND (2.81)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Barium	23.7 (2.81)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Beryllium	0.25 (0.12)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Cadmium	ND (0.56)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Chromium	14.5 (1.12)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Lead	22.1 (5.61)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Mercury	0.065 (0.035)		7471B		1	YIV	02/23/23 11:20	0.66	40	DB32003
Nickel	8.15 (2.81)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Selenium	ND (5.61)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Silver	ND (0.56)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Thallium	ND (5.61)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Vanadium	18.7 (1.12)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Zinc	29.2 (2.81)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 0-1
Date Sampled: 02/16/23 14:30
Percent Solids: 87
Initial Volume: 19.6g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Acenaphthene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Acenaphthylene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Anthracene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(a)anthracene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(a)pyrene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Chrysene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Fluoranthene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Fluorene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Naphthalene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Phenanthrene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Pyrene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	74 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	79 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	75 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	87 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-205 - 0-1

Date Sampled: 02/16/23 14:30

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-12

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 2-4
Date Sampled: 02/16/23 14:30
Percent Solids: 91

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-13
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.45)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Arsenic	3.15 (2.73)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Barium	47.9 (2.73)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Beryllium	0.25 (0.12)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Cadmium	ND (0.55)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Chromium	14.9 (1.09)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Lead	50.6 (5.45)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Mercury	0.409 (0.034)		7471B		1	YIV	02/23/23 11:22	0.64	40	DB32003
Nickel	12.0 (2.73)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Selenium	ND (5.45)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Silver	ND (0.55)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Thallium	ND (5.45)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Vanadium	35.1 (1.09)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Zinc	69.0 (2.73)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 2-4
Date Sampled: 02/16/23 14:30
Percent Solids: 91
Initial Volume: 19.5g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Acenaphthene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Acenaphthylene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Anthracene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(a)anthracene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(a)pyrene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Chrysene	0.318 (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Fluoranthene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Fluorene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Naphthalene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Phenanthrene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Pyrene	0.360 (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	78 %		30-130
Surrogate: 2-Fluorobiphenyl	85 %		30-130
Surrogate: Nitrobenzene-d5	83 %		30-130
Surrogate: p-Terphenyl-d14	91 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 2-4
Date Sampled: 02/16/23 14:30

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-13
Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 4-6
Date Sampled: 02/16/23 14:30
Percent Solids: 76

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-14
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.83)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Arsenic	10.6 (2.92)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Barium	155 (2.92)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Beryllium	0.67 (0.13)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Cadmium	ND (0.58)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Chromium	10.4 (1.17)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Lead	1650 (5.83)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Mercury	0.654 (0.040)		7471B		1	YIV	02/23/23 11:25	0.66	40	DB32003
Nickel	16.8 (2.92)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Selenium	ND (5.83)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Silver	ND (0.58)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Thallium	ND (5.83)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Vanadium	38.2 (1.17)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Zinc	329 (2.92)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 4-6
Date Sampled: 02/16/23 14:30
Percent Solids: 76
Initial Volume: 19.1g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Acenaphthene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Acenaphthylene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Anthracene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(a)anthracene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(a)pyrene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Chrysene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Fluoranthene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Fluorene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Naphthalene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Phenanthrene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Pyrene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	78 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	84 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	82 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	92 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-205 - 4-6

Date Sampled: 02/16/23 14:30

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-14

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								
Dioxin	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 0-1
Date Sampled: 02/16/23 15:15
Percent Solids: 80

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-15
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.86)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Arsenic	5.03 (2.93)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Barium	104 (2.93)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Beryllium	0.39 (0.13)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Cadmium	ND (0.59)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Chromium	17.4 (1.17)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Lead	330 (5.86)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Mercury	0.088 (0.036)		7471B		1	YIV	02/23/23 11:27	0.69	40	DB32003
Nickel	16.4 (2.93)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Selenium	ND (5.86)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Silver	ND (0.59)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Thallium	ND (5.86)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Vanadium	24.3 (1.17)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Zinc	199 (2.93)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 0-1
Date Sampled: 02/16/23 15:15
Percent Solids: 80
Initial Volume: 19.9g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Acenaphthene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Acenaphthylene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Anthracene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(a)anthracene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(a)pyrene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Chrysene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Fluoranthene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Fluorene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Naphthalene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Phenanthrene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Pyrene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>83 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>88 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>86 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>92 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-206 - 0-1

Date Sampled: 02/16/23 15:15

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-15

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 2-4
Date Sampled: 02/16/23 15:15
Percent Solids: 84

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-16
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	6.85 (1.06)		6020A		1	BJV	02/23/23 17:24	2.24	100	DB32002
Arsenic	13.9 (2.65)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Barium	85.9 (2.65)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Beryllium	0.33 (0.12)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Cadmium	ND (0.53)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Chromium	16.0 (2.12)		6010C		2	CEV	02/22/23 16:31	2.24	100	DB32002
Lead	319 (10.6)		6010C		2	CEV	02/22/23 16:31	2.24	100	DB32002
Mercury	0.223 (0.039)		7471B		1	YIV	02/23/23 11:29	0.6	40	DB32003
Nickel	37.4 (2.65)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Selenium	ND (1.06)		6020A		1	BJV	02/23/23 17:24	2.24	100	DB32002
Silver	EL ND (1.06)		6010C		2	CEV	02/22/23 16:31	2.24	100	DB32002
Thallium	ND (5.30)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Vanadium	21.5 (1.06)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Zinc	341 (2.65)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 2-4
Date Sampled: 02/16/23 15:15
Percent Solids: 84
Initial Volume: 20.9g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Acenaphthene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Acenaphthylene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Anthracene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(a)anthracene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(a)pyrene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(b)fluoranthene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(g,h,i)perylene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(k)fluoranthene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Chrysene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Dibenzo(a,h)Anthracene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Fluoranthene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Fluorene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Naphthalene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Phenanthrene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Pyrene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	83 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	84 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	79 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	97 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-206 - 2-4

Date Sampled: 02/16/23 15:15

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-16

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 4-5
Date Sampled: 02/16/23 15:15
Percent Solids: 91

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-17
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (4.98)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Arsenic	ND (2.49)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Barium	57.2 (2.49)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Beryllium	0.34 (0.11)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Cadmium	ND (0.50)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Chromium	12.0 (1.00)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Lead	EL ND (9.97)		6010C		2	CEV	02/22/23 16:33	2.21	100	DB32002
Mercury	0.034 (0.034)		7471B		1	YIV	02/23/23 11:31	0.64	40	DB32003
Nickel	8.75 (2.49)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Selenium	ND (4.98)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Silver	ND (0.50)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Thallium	ND (4.98)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Vanadium	21.7 (1.00)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Zinc	24.9 (2.49)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 4-5
Date Sampled: 02/16/23 15:15
Percent Solids: 91
Initial Volume: 20.9g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-17
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Acenaphthene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Acenaphthylene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Anthracene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(a)anthracene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(a)pyrene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(b)fluoranthene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(g,h,i)perylene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(k)fluoranthene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Chrysene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Dibenzo(a,h)Anthracene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Fluoranthene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Fluorene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Naphthalene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Phenanthrene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Pyrene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>85 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>85 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>83 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>98 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 4-5
Date Sampled: 02/16/23 15:15

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-17
Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-207F - 4-6
Date Sampled: 02/16/23 15:30
Percent Solids: 86

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-18
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.62)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Arsenic	8.13 (2.81)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Barium	287 (2.81)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Beryllium	0.33 (0.12)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Cadmium	1.85 (0.56)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Chromium	20.2 (1.12)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Lead	455 (5.62)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Mercury	0.406 (0.033)		7471B		1	YIV	02/23/23 11:33	0.69	40	DB32003
Nickel	23.6 (2.81)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Selenium	ND (5.62)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Silver	ND (0.56)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Thallium	ND (5.62)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Vanadium	18.9 (1.12)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Zinc	926 (2.81)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-207F - 4-6
Date Sampled: 02/16/23 15:30
Percent Solids: 86
Initial Volume: 20.8g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-18
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Acenaphthene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Acenaphthylene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Anthracene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(a)anthracene	0.911 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(a)pyrene	0.830 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(b)fluoranthene	0.802 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(g,h,i)perylene	0.428 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(k)fluoranthene	0.486 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Chrysene	0.922 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Dibenzo(a,h)Anthracene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Fluoranthene	1.56 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Fluorene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Indeno(1,2,3-cd)Pyrene	0.492 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Naphthalene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Phenanthrene	0.956 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Pyrene	1.59 (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	87 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	85 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	81 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	91 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.

Client Project ID: Claxton Field

Client Sample ID: B-207F - 4-6

Date Sampled: 02/16/23 15:30

ESS Laboratory Work Order: 23B0634

ESS Laboratory Sample ID: 23B0634-18

Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: CF-STOCKPILE
Date Sampled: 02/16/23 14:00
Percent Solids: 76

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-19
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (6.40)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Arsenic	4.97 (3.20)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Barium	88.7 (3.20)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Beryllium	0.26 (0.14)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Cadmium	0.70 (0.64)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Chromium	14.0 (1.28)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Lead	206 (6.40)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Mercury	0.433 (0.043)		7471B		1	YIV	02/23/23 11:35	0.61	40	DB32003
Nickel	9.97 (3.20)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Selenium	ND (6.40)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Silver	ND (0.64)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Thallium	ND (6.40)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Vanadium	17.2 (1.28)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Zinc	199 (3.20)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: CF-STOCKPILE
Date Sampled: 02/16/23 14:00
Percent Solids: 76
Initial Volume: 19.5g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-19
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Acenaphthene	ND (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Acenaphthylene	1.46 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Anthracene	0.891 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(a)anthracene	2.36 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(a)pyrene	2.19 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(b)fluoranthene	1.85 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(g,h,i)perylene	1.32 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(k)fluoranthene	1.40 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Chrysene	2.69 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Dibenzo(a,h)Anthracene	0.412 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Fluoranthene	3.92 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Fluorene	0.487 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Indeno(1,2,3-cd)Pyrene	1.42 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Naphthalene	ND (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Phenanthrene	4.14 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Pyrene	4.57 (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	80 %		30-130
Surrogate: 2-Fluorobiphenyl	73 %		30-130
Surrogate: Nitrobenzene-d5	80 %		30-130
Surrogate: p-Terphenyl-d14	90 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: CF-STOCKPILE
Date Sampled: 02/16/23 14:00

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-19
Sample Matrix: Soil

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Asbestos	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch DB32002 - 3050B

Blank

Antimony	ND	4.88	mg/kg wet
Arsenic	ND	2.44	mg/kg wet
Barium	ND	2.44	mg/kg wet
Beryllium	ND	0.11	mg/kg wet
Cadmium	ND	0.49	mg/kg wet
Chromium	ND	0.98	mg/kg wet
Lead	ND	4.88	mg/kg wet
Nickel	ND	2.44	mg/kg wet
Selenium	ND	4.88	mg/kg wet
Silver	ND	0.49	mg/kg wet
Thallium	ND	4.88	mg/kg wet
Vanadium	ND	0.98	mg/kg wet
Zinc	ND	2.44	mg/kg wet

Blank

Antimony	ND	0.98	mg/kg wet
Selenium	ND	0.98	mg/kg wet
Thallium	ND	0.49	mg/kg wet

LCS

Antimony	63.1	15.6	mg/kg wet	59.10	107	80-120
Arsenic	61.0	7.81	mg/kg wet	65.20	94	80-120
Barium	642	7.81	mg/kg wet	626.0	103	80-120
Beryllium	61.4	0.34	mg/kg wet	72.20	85	80-120
Cadmium	98.9	1.56	mg/kg wet	118.0	84	80-120
Chromium	136	3.12	mg/kg wet	159.0	86	80-120
Lead	203	15.6	mg/kg wet	230.0	88	80-120
Nickel	160	7.81	mg/kg wet	183.0	88	80-120
Selenium	46.4	15.6	mg/kg wet	55.70	83	80-120
Silver	42.7	1.56	mg/kg wet	46.20	92	80-120
Thallium	73.9	15.6	mg/kg wet	83.30	89	80-120
Vanadium	81.7	3.12	mg/kg wet	94.80	86	80-120
Zinc	308	7.81	mg/kg wet	375.0	82	80-120

LCS

Antimony	69.0	15.6	mg/kg wet	59.10	117	80-120
Selenium	48.0	15.6	mg/kg wet	55.70	86	80-120
Thallium	64.7	7.81	mg/kg wet	83.30	78	65-134

LCS Dup

Antimony	60.5	15.2	mg/kg wet	59.10	102	80-120	4	30
Arsenic	56.0	7.58	mg/kg wet	65.20	86	80-120	9	30
Barium	623	7.58	mg/kg wet	626.0	99	80-120	3	30
Beryllium	57.6	0.33	mg/kg wet	72.20	80	80-120	6	20
Cadmium	92.8	1.52	mg/kg wet	118.0	79	80-120	6	30
Chromium	127	3.03	mg/kg wet	159.0	80	80-120	7	30
Lead	189	15.2	mg/kg wet	230.0	82	80-120	7	20

B-



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch DB32002 - 3050B

Nickel	150	7.58	mg/kg wet	183.0		82	80-120	7	30	
Selenium	44.1	15.2	mg/kg wet	55.70		79	80-120	5	30	B-
Silver	40.1	1.52	mg/kg wet	46.20		87	80-120	6	30	
Thallium	67.9	15.2	mg/kg wet	83.30		82	80-120	9	30	
Vanadium	76.7	3.03	mg/kg wet	94.80		81	80-120	6	30	
Zinc	290	7.58	mg/kg wet	375.0		77	80-120	6	30	B-

LCS Dup

Antimony	65.3	15.2	mg/kg wet	59.10		111	80-120	5	30	
Selenium	45.5	15.2	mg/kg wet	55.70		82	80-120	5	30	
Thallium	60.8	7.58	mg/kg wet	83.30		73	65-134	6	30	

Batch DB32003 - 7471A

Blank

Mercury	ND	0.029	mg/kg wet							
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LCS

Mercury	16.2	3.30	mg/kg wet	18.20		89	80-120			
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LCS Dup

Mercury	16.3	3.30	mg/kg wet	18.20		90	80-120	1	30	
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8270D Polynuclear Aromatic Hydrocarbons

Batch DB32111 - 3546

Blank

2-Methylnaphthalene	ND	0.250	mg/kg wet							
Acenaphthene	ND	0.250	mg/kg wet							
Acenaphthylene	ND	0.250	mg/kg wet							
Anthracene	ND	0.250	mg/kg wet							
Benzo(a)anthracene	ND	0.250	mg/kg wet							
Benzo(a)pyrene	ND	0.250	mg/kg wet							
Benzo(b)fluoranthene	ND	0.250	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.250	mg/kg wet							
Benzo(k)fluoranthene	ND	0.250	mg/kg wet							
Chrysene	ND	0.250	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.250	mg/kg wet							
Fluoranthene	ND	0.250	mg/kg wet							
Fluorene	ND	0.250	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.250	mg/kg wet							
Naphthalene	ND	0.250	mg/kg wet							
Phenanthrene	ND	0.250	mg/kg wet							
Pyrene	ND	0.250	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.35		mg/kg wet	2.500		94	30-130			
Surrogate: 2-Fluorobiphenyl	2.33		mg/kg wet	2.500		93	30-130			
Surrogate: Nitrobenzene-d5	2.35		mg/kg wet	2.500		94	30-130			
Surrogate: p-Terphenyl-d14	2.41		mg/kg wet	2.500		96	30-130			

LCS



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Polynuclear Aromatic Hydrocarbons

Batch DB32111 - 3546

2-Methylnaphthalene	2.34	0.250	mg/kg wet	2.500		93	40-140			
Acenaphthene	2.21	0.250	mg/kg wet	2.500		88	40-140			
Acenaphthylene	1.68	0.250	mg/kg wet	2.500		67	40-140			
Anthracene	2.18	0.250	mg/kg wet	2.500		87	40-140			
Benzo(a)anthracene	2.34	0.250	mg/kg wet	2.500		94	40-140			
Benzo(a)pyrene	2.30	0.250	mg/kg wet	2.500		92	40-140			
Benzo(b)fluoranthene	2.32	0.250	mg/kg wet	2.500		93	40-140			
Benzo(g,h,i)perylene	2.46	0.250	mg/kg wet	2.500		98	40-140			
Benzo(k)fluoranthene	2.51	0.250	mg/kg wet	2.500		100	40-140			
Chrysene	2.35	0.250	mg/kg wet	2.500		94	40-140			
Dibenzo(a,h)Anthracene	2.47	0.250	mg/kg wet	2.500		99	40-140			
Fluoranthene	2.50	0.250	mg/kg wet	2.500		100	40-140			
Fluorene	2.39	0.250	mg/kg wet	2.500		96	40-140			
Indeno(1,2,3-cd)Pyrene	2.33	0.250	mg/kg wet	2.500		93	40-140			
Naphthalene	2.29	0.250	mg/kg wet	2.500		91	40-140			
Phenanthrene	2.25	0.250	mg/kg wet	2.500		90	40-140			
Pyrene	2.35	0.250	mg/kg wet	2.500		94	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	2.500		98	30-130			
Surrogate: 2-Fluorobiphenyl	2.40		mg/kg wet	2.500		96	30-130			
Surrogate: Nitrobenzene-d5	2.46		mg/kg wet	2.500		98	30-130			
Surrogate: p-Terphenyl-d14	2.44		mg/kg wet	2.500		98	30-130			

LCS Dup

2-Methylnaphthalene	2.29	0.250	mg/kg wet	2.500		92	40-140	2	30	
Acenaphthene	2.20	0.250	mg/kg wet	2.500		88	40-140	0.3	30	
Acenaphthylene	1.63	0.250	mg/kg wet	2.500		65	40-140	3	30	
Anthracene	2.15	0.250	mg/kg wet	2.500		86	40-140	1	30	
Benzo(a)anthracene	2.34	0.250	mg/kg wet	2.500		94	40-140	0.04	30	
Benzo(a)pyrene	2.26	0.250	mg/kg wet	2.500		90	40-140	2	30	
Benzo(b)fluoranthene	2.28	0.250	mg/kg wet	2.500		91	40-140	2	30	
Benzo(g,h,i)perylene	2.49	0.250	mg/kg wet	2.500		99	40-140	1	30	
Benzo(k)fluoranthene	2.49	0.250	mg/kg wet	2.500		100	40-140	0.7	30	
Chrysene	2.32	0.250	mg/kg wet	2.500		93	40-140	1	30	
Dibenzo(a,h)Anthracene	2.46	0.250	mg/kg wet	2.500		98	40-140	0.5	30	
Fluoranthene	2.50	0.250	mg/kg wet	2.500		100	40-140	0.004	30	
Fluorene	2.34	0.250	mg/kg wet	2.500		94	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	2.33	0.250	mg/kg wet	2.500		93	40-140	0.1	30	
Naphthalene	2.26	0.250	mg/kg wet	2.500		90	40-140	1	30	
Phenanthrene	2.25	0.250	mg/kg wet	2.500		90	40-140	0.09	30	
Pyrene	2.29	0.250	mg/kg wet	2.500		92	40-140	2	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	2.500		98	30-130			
Surrogate: 2-Fluorobiphenyl	2.46		mg/kg wet	2.500		98	30-130			
Surrogate: Nitrobenzene-d5	2.55		mg/kg wet	2.500		102	30-130			
Surrogate: p-Terphenyl-d14	2.49		mg/kg wet	2.500		100	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

Notes and Definitions

Z-08	See Attached
U	Analyte included in the analysis, but not detected
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
TNTC	Too numerous to Count
CFU	Colony Forming Units



CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/meedc/environmental-health/dwp/partners/labCert.shtml>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

Pennsylvania: 68-01752

<http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

Shawn Morrell
ESS Laboratory
185 Frances Ave.
Cranston, RI 02910

February 24, 2023

Dear Shawn Morrell,

The enclosed analytical results have been obtained using the EPA/600/R-93/116 method. Calibrated Visual Estimate (CVE) is used by Aerobiology for the determination of the percentage of asbestos and other components in the sample. The sample preparation technique used was in accordance with the US EPA office of Environmental Evaluation and Measurement - Region 1 requirements. This technique involves the elimination of interfering particles through the following steps: homogenization of the sample; separation of different fractions and examination under the stereomicroscope.

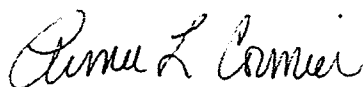
The quality control data related to the samples analyzed is available upon client's written request. Aerobiology Laboratory Associates, Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client. As such, these results apply to the sample(s) as received.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested. This report may not be reproduced, except in its entirety, without the permission of Aerobiology Laboratory Associates, Inc., Laboratory Manager.

If you have any questions please contact the Optical Manager or the Laboratory Manager.

Sincerely,



Aimee Cormier, Laboratory Manager

Enclosure:

LAB BATCH ID: S 132432 CLIENT PROJECT ID: 23B0634

Client Ref: N/A

CT ID# PH-0209; MA ID# AA000251; ME ID# LB-055; NVLAP Lab Code 200090-0; RI ID # PLM-00150; VT ID# AL254362.

Aerobiology Laboratory Associates, Inc.

Client #: 2118
 Client Project: 23B0634
 Client Reference: N/A
 Client Name: ESS Laboratory
 Method: EPA/600/R-93/116; ENV.EVAL. and MEAS.- REGION 1 Requirements

Batch: S 132432
 Date Sampled: N/A
 Date Received: 2/22/2023
 Date Analyzed: 2/24/2023
 Date of Report: 2/24/2023

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-01	Multi	0	0	0	0	0	0	0	0	5	0	0	0	95

Description: Soil

Location: N/A

Comments:

Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-02	Multi	0	0	0	0	0	0	0	0	5	0	0	0	95

Description: Soil

Location: N/A

Comments:

Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-03	Multi	0	0	0	0	0	0	2	0	5	0	0	0	93

Description: Soil

Location: N/A

Comments:

Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-04	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98

Description: Soil

Location: N/A

Comments:

Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-05	Multi	0	0	0	0	0	0	2	0	5	0	0	0	93

Description: Soil

Location: N/A

Comments:

Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-06	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98

Description: Soil

Location: N/A

Comments:

Analyzed: Yes

Aerobiology Laboratory Associates, Inc.

Client #: 2118
 Client Project: 23B0634
 Client Reference: N/A
 Client Name: ESS Laboratory
 Method: EPA/600/R-93/116; ENV.EVAL. and MEAS.- REGION 1 Requirements

Batch: S 132432
 Date Sampled: N/A
 Date Received: 2/22/2023
 Date Analyzed: 2/24/2023
 Date of Report: 2/24/2023

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-07	Multi	0	0	0	0	0	0	0	0	15	0	0	0	85
Description: Soil Location: N/A Comments:														Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-08	Multi	0	0	0	0	0	0	0	0	2	0	0	2	96
Description: Soil Location: N/A Comments:														Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-09	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98
Description: Soil Location: N/A Comments:														Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-10	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98
Description: Soil Location: N/A Comments:														Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-11	Multi	0	0	0	0	0	0	0	0	3	0	0	0	97
Description: Soil Location: N/A Comments:														Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-12	Multi	0	0	0	0	0	0	0	0	5	0	0	0	95
Description: Soil Location: N/A Comments:														Analyzed: Yes

Aerobiology Laboratory Associates, Inc.

Client #: 2118
 Client Project: 23B0634
 Client Reference: N/A
 Client Name: ESS Laboratory
 Method: EPA/600/R-93/116; ENV.EVAL. and MEAS.- REGION 1 Requirements

Batch: S 132432
 Date Sampled: N/A
 Date Received: 2/22/2023
 Date Analyzed: 2/24/2023
 Date of Report: 2/24/2023

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-13	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98
Description: Soil Location: N/A Comments: Analyzed: Yes														

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-14	Multi	0	0	0	0	0	0	2	0	2	0	0	0	96
Description: Soil Location: N/A Comments: Analyzed: Yes														

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-15	Multi	0	0	0	0	0	0	0	0	7	0	0	0	93
Description: Soil Location: N/A Comments: Analyzed: Yes														

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-16	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98
Description: Soil Location: N/A Comments: Analyzed: Yes														

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-17	Multi	0	0	0	0	0	0	0	0	<1	0	0	0	100
Description: Soil Location: N/A Comments: Analyzed: Yes														

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-18	Multi	0	0	0	0	0	0	0	0	5	0	0	0	95
Description: Soil Location: N/A Comments: Analyzed: Yes														

Aerobiology Laboratory Associates, Inc.

Client #: 2118
 Client Project: 23B0634
 Client Reference: N/A
 Client Name: ESS Laboratory
 Method: EPA/600/R-93/116; ENV.EVAL. and MEAS.- REGION 1 Requirements

Batch: S 132432
 Date Sampled: N/A
 Date Received: 2/22/2023
 Date Analyzed: 2/24/2023
 Date of Report: 2/24/2023

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-19	Multi	0	0	0	0	0	0	0	0	15	0	0	0	85
Description: Soil Location: N/A Comments: Analyzed: Yes														

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite

Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

* All results are in percentage


 Brian Shea, Analyst

Client Name: ESS Laboratory

Client Project #: 23B0634

Client Reference: N/A

Batch: S 132432

Date Received: 2/22/2023

Date Due: 2/24/2023

Stop on first pos: Yes or No

Batch: S 132432

Batch: 132432		Stereo Scope					Optical Properties					RI		Asbestos Percent							Non-Asbestos Percent							
Sample ID	Description	Analyst	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
23B0634-01	Soil	BS	0	M	N	M	Y															W						
23B0634-02	Soil		0	M	N	M	Y																5				95	
23B0634-03	Soil		0	M	N	M	Y														HL		W					
23B0634-04	Soil		0	M	N	M	Y														2		5				93	
23B0634-05	Soil		0	M	N	M	Y																W					
23B0634-06	Soil		0	M	N	M	Y															HL		2				95
23B0634-07	Soil		0	M	N	M	Y															2		5				93
23B0634-08	Soil		0	M	N	M	Y																W					
			0	M	N	M	Y																W			HL		
			0	M	N	M	Y																2			2	96	

Comments:

Batch: S132432

Batch: 132432		Stereo Scope					Optical Properties					RI		Asbestos Percent					Non-Asbestos Percent								
Sample ID	Description	Analysis	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
23B0634-09	Soil	BS	0	M	N	M	Y															W	2				98
23B0634-10	Soil		0	M	N	M	Y															W	2				98
23B0634-11	Soil		0	M	N	M	Y															W	3				98 ^{BS}
23B0634-12	Soil		0	M	N	M	Y															W	5				95
23B0634-13	Soil		0	M	N	M	Y															W	2				98
23B0634-14	Soil		0	M	N	M	Y															W	2				96
23B0634-15	Soil		0	M	N	M	Y															W	7				93.
23B0634-16	Soil		0	M	N	M	Y															W	2				98
23B0634-17	Soil		0	M	N	M	Y															W	4				100
23B0634-18	Soil		0	M	N	M	Y															W	5				95

Comments:

Batch: *S*132432

Batch: 132432		Stereo Scope					Optical Properties					RI		Asbestos Percent					Non-Asbestos Percent									
Sample ID	Description	Analyst	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Elongation	Sign of	Birefringence	Pleochroism	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
23B0634-19	Soil	BS		M	C	N	M	Y															W					85
		V	O																				15					

Analyzed By / Date:

Brian
02/24/22

QC By / Date:

gjp
2/24/22

Fax, Email, Verbal Results By / Date:

of Samples:

19

Comments:



SUBCONTRACT ORDER

5132432

23B0634

SENDING LABORATORY:

ESS Laboratory
185 Frances Avenue
Cranston, RI 02910
Phone: (401) 461-7181
Fax: (401) 461-4486
Project Name: 23B0634

RECEIVING LABORATORY:

Aerobiology Boston
22 Cummings Park
Woburn, MA 01801
Phone: (781) 935-3212
Fax: (781) 392-4857

☐ These samples require MCL exceedance reporting

Sample ID: 23B0634-01	Matrix: Soil	Sampled: 02/16/23 10:45
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-02	Matrix: Soil	Sampled: 02/16/23 10:45
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-03	Matrix: Soil	Sampled: 02/16/23 10:45
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-04	Matrix: Soil	Sampled: 02/16/23 10:15
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-05	Matrix: Soil	Sampled: 02/16/23 10:15
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Released By	Date	Received By	Date
		<i>Doreen Dunsen</i>	2/22/23 1:18
Released By	Date	Received By	Date



SUBCONTRACT ORDER

5132 432

23B0634

Sample ID: 23B0634-06	Matrix: Soil	Sampled: 02/16/23 13:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-07	Matrix: Soil	Sampled: 02/16/23 13:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-08	Matrix: Soil	Sampled: 02/16/23 13:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-09	Matrix: Soil	Sampled: 02/16/23 12:00
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-10	Matrix: Soil	Sampled: 02/16/23 12:00
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-11	Matrix: Soil	Sampled: 02/16/23 12:00
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Released By	Date	Received By	Date
Released By	Date	Received By	Date



SUBCONTRACT ORDER

23B0634

5132432

Sample ID: 23B0634-12	Matrix: Soil	Sampled: 02/16/23 14:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-13	Matrix: Soil	Sampled: 02/16/23 14:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-14	Matrix: Soil	Sampled: 02/16/23 14:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-15	Matrix: Soil	Sampled: 02/16/23 15:15
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-16	Matrix: Soil	Sampled: 02/16/23 15:15
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-17	Matrix: Soil	Sampled: 02/16/23 15:15
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Released By	Date	Received By	Date
Released By	Date	Received By	Date



SUBCONTRACT ORDER

S132432

23B0634

Sample ID: 23B0634-18	Matrix: Soil	Sampled: 02/16/23 15:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-19	Matrix: Soil	Sampled: 02/16/23 14:00
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Released By	Date	Received By	Date
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Released By	Date	Received By	Date
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Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Prepared Date:

March 10, 2023

Report Information:

Pace Project #: 10643743
Sample Receipt Date: 02/22/2023
Client Project #: 23B0634
Client Sub PO #: B03045
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:



March 10, 2023

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)



Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.



DISCUSSION

This report presents the results from the analyses performed on nine samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The estimated detection limits (EDLs) were based on signal-to-noise measurements. Estimated maximum possible concentration (EMPC) values were treated as positives in the toxic equivalence calculations.

Second column confirmation analyses of 2,3,7,8-TCDF values obtained from the primary (DB5-MS) column are performed only when specifically requested for a project and only when the values are above the concentration of the lowest calibration standard. Typical resolution for this isomer using the DB5-MS column ranges from 25-30%.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 52-115%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

Values were flagged "I" where incorrect isotope ratios were obtained or "P" where polychlorinated diphenyl ethers were present. Concentrations below the calibration range were flagged "J" and should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain a trace level of Total HpCDD. This level was below the calibration range for the method. The Total HpCDD concentrations reported for the field samples were higher than the corresponding blank level by one or more orders of magnitude.

A laboratory spike sample was also prepared using clean reference matrix that had been fortified with native standard materials. The recoveries of the native compounds ranged from 95-125%. These results were within the target range for the method. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

The responses obtained for selected labeled congeners in calibration standard analyses L230301B_17 and L230303A_13 were outside the target ranges. As specified in our procedures for this method, the averages of the daily response factors for these compounds were used in the calculations for the samples from these runshifts. The affected values were flagged "Y" on the results tables.

REPORT OF LABORATORY ANALYSIS

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Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Missouri	10100
Alabama	40770	Montana	CERT0092
Alaska-DW	MN00064	Nebraska	NE-OS-18-06
Alaska-UST	17-009	Nevada	MN00064
Arizona	AZ0014	New Hampshire	2081
Arkansas - WW	88-0680	New Jersey	MN002
Arkansas-DW	MN00064	New York	11647
California	2929	North Carolina-	27700
Colorado	MN00064	North Carolina-	530
Connecticut	PH-0256	North Dakota	R-036
Florida	E87605	Ohio-DW	41244
Georgia	959	Ohio-VAP (170	CL101
Hawaii	MN00064	Ohio-VAP (180	CL110
Idaho	MN00064	Oklahoma	9507
Illinois	200011	Oregon-Primary	MN300001
Indiana	C-MN-01	Oregon-Second	MN200001
Iowa	368	Pennsylvania	68-00563
Kansas	E-10167	Puerto Rico	MN00064
Kentucky-DW	90062	South Carolina	74003
Kentucky-WW	90062	Tennessee	TN02818
Louisiana-DEQ	AI-84596	Texas	T104704192
Louisiana-DW	MN00064	Utah	MN00064
Maine	MN00064	Vermont	VT-027053137
Maryland	322	Virginia	460163
Michigan	9909	Washington	C486
Minnesota	027-053-137	West Virginia-D	382
Minnesota-Ag	via MN 027-053	West Virginia-D	9952C
Minnesota-Petr	1240	Wisconsin	999407970
Mississippi	MN00064	Wyoming-UST	via A2LA 2926.

REPORT OF LABORATORY ANALYSIS

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Report No.....2



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1700 Elm Street, Suite 200
Minneapolis, MN 55414
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Appendix A

Sample Management

REPORT OF LABORATORY ANALYSIS

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SUBCONTRACT ORDER

WO#: 10643743

23B0634

SENDING LABORATORY:

ESS Laboratory
185 Frances Avenue
Cranston, RI 02910
Phone: (401) 461-7181
Fax: (401) 461-4486
Project Name: 23B0634

RECEIVING LABORATORY:

Pace Analytical
1700 Elm Street
Minneapolis, MN 55414
Phone: (612) 607-1700
Fax: (612) 607-6444

☐ These samples require MCL exceedance reporting

Sample ID: 23B0634-06

Matrix: Soil

Sampled: 02/16/23 13:30

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Sample ID: 23B0634-07

Matrix: Soil

Sampled: 02/16/23 13:30

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Sample ID: 23B0634-08

Matrix: Soil

Sampled: 02/16/23 13:30

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Sample ID: 23B0634-09

Matrix: Soil

Sampled: 02/16/23 12:00

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Sample ID: 23B0634-10

Matrix: Soil

Sampled: 02/16/23 12:00

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Released By

Date

Received By

Date

Released By

Date

Received By

Date



SUBCONTRACT ORDER

23B0634

Sample ID: 23B0634-11

Matrix: Soil

Sampled: 02/16/23 12:00

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Sample ID: 23B0634-12

Matrix: Soil

Sampled: 02/16/23 14:30

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Sample ID: 23B0634-13

Matrix: Soil

Sampled: 02/16/23 14:30

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Sample ID: 23B0634-14

Matrix: Soil

Sampled: 02/16/23 14:30

DEP Location Name: N/A

DEP Sample Type: N/A

DEP Location ID#: N/A

Sampled By: N/A

Analysis

Due

Expires

Released By

Date

Received By

Date

Released By

Date

Received By

Date



SUBCONTRACT ORDER

23B0634

SENDING LABORATORY:

ESS Laboratory
185 Frances Avenue
Cranston, RI 02910
Phone: (401) 461-7181
Fax: (401) 461-4486
Project Name: 23B0634

RECEIVING LABORATORY:

Pace Analytical
1700 Elm Street
Minneapolis, MN 55414
Phone : (612) 607-1700
Fax: (612) 607-6444

☐ **These samples require MCL exceedance reporting**

Sample ID: 23B0634-06	Matrix: Soil	Sampled: 02/16/23 13:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-07	Matrix: Soil	Sampled: 02/16/23 13:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-08	Matrix: Soil	Sampled: 02/16/23 13:30
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-09	Matrix: Soil	Sampled: 02/16/23 12:00
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-10	Matrix: Soil	Sampled: 02/16/23 12:00
DEP Location Name: N/A	DEP Sample Type: N/A	
DEP Location ID#: N/A	Sampled By: N/A	
Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Released By	Date	Received By	Date
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Released By	Date	Received By	Date
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SUBCONTRACT ORDER

23B0634

Sample ID: 23B0634-11 **Matrix: Soil** **Sampled: 02/16/23 12:00**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-12 **Matrix: Soil** **Sampled: 02/16/23 14:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-13 **Matrix: Soil** **Sampled: 02/16/23 14:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-14 **Matrix: Soil** **Sampled: 02/16/23 14:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Released By	Date	Received By	Date
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Released By	Date	Received By	Date
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DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt
(SCUR) Exception Form

Effective Date: 09/22/2022

Workorder #: 10643743

No Temp Blank		
Read Temp	Corrected Temp	Average temp
5.5	5.8	4.9
5.5	5.8	
3.8	4.1	
3.5	3.8	

PM Notified of Out of Temp Cooler? ☐ Yes ☐ No
If yes, indicate who was contacted, date and time. If no, indicate reason why.
Multiple Cooler Project? ☐ Yes ☐ No

If anything is OVER 6.0° C, you **MUST** document containers in this section **HERE**



Tracking Number	Temperature

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples										
Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	

Comments:

DC#_Title: Excel Form Template

Effective Date:

Sample Condition Upon Receipt	Client Name:	Project #:
	<u>ESS Laboratory</u>	WO#: 10643743
Courier: ☐ FedEx ☒ UPS ☐ USPS ☐ Client ☐ Pace ☐ Speedee ☐ Commercial		PM: JMR Due Date: 03/15/23 CLIENT: ESS LAB
Tracking Number: <u>1Z 037 497 01 7208 7788</u>		☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No	Seals Intact? ☐ Yes ☒ No	Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A
Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other	Temp Blank? ☐ Yes ☒ No	
Thermometer: ☐ T1 (0461) ☐ T2 (1336) ☐ T3 (0459) ☐ T4 (0254) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☒ T9 (0727) ☐ 01339252/1710	Type of Ice: ☒ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted	

Did Samples Originate in West Virginia? ☐ Yes ☐ No	Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A
Temp should be above freezing to 6 °C	Cooler temp Read w/Temp Blank: _____ °C
Correction Factor: <u>40.3</u>	Cooler Temp Corrected w/temp blank: _____ °C
Average Corrected Temp (no temp blank only): _____ °C ☒ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container	

USDA Regulated Soil: ☐ N/A, water sample/other: _____) Date/Initials of Person Examining Contents: HB 2/22/23

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork..

Location (Check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☐ Yes ☒ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Sample Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No ☐ N/A	8.
-Pace Containers Used? ☐ Yes ☒ No	9.
Containers Intact? ☒ Yes ☐ No	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Field Filtered Volume Received for Dissolved Tests? ☐ Yes ☐ No ☒ N/A	11. If no, write ID/Date/Time of container below: ☐ See Exceptions ENV-FRM-MIN4-0142
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☒ Soil ☐ Oil ☐ Other	12. Sample # ☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate
All containers needing acid/base preservation have been checked? ☐ Yes ☐ No ☒ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
All containers needing preservation are found to be in compliance with EPA recommendation? ☐ Yes ☐ No ☒ N/A	pH Paper Lot #
(HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	Residual Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS ☐ Yes ☐ No ☒ N/A	13.
(*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	15. Pace Trip Blank Lot # (if purchased): _____
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A	
Headspace in VOA Vials (greater than 6mm)? ☐ Yes ☐ No ☒ N/A	
3 Trip Blanks Present? ☐ Yes ☐ No ☒ N/A	
Trip Blank Custody Seals Present? ☐ Yes ☐ No ☒ N/A	

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Joanne RichardsonDate: 2-22-23

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: RWTLine: 1

Qualtrax ID: 28060

Report No.: 10643743_SW8290FC_L2_dfr

Pace® Analytical Services, LLC

Page 1 of 1
Page 001 of 106



Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
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Reporting Flags

- A = Reporting Limit based on signal to noise (EDL)
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- H2 = Extracted outside of holding time
- I = Isotope ratio out of specification
- J = Estimated value
- L = Suppressive interference, analyte may be biased low
- Nn = Value obtained from additional analysis
- P = PCDE Interference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
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www.pacelabs.com

Appendix B

Sample Analysis Summary

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-06		
Lab Sample ID	10643743001		
Filename	L230303A_03		
Injected By	SMT		
Total Amount Extracted	10.4 g	Matrix	Solid
% Moisture	26.9	Dilution	NA
Dry Weight Extracted	7.59 g	Collected	02/16/2023 13:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 06:29

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.99	----	0.39 J		2,3,7,8-TCDF-13C	2.00	78
Total TCDF	12	----	0.39		2,3,7,8-TCDD-13C	2.00	72
					1,2,3,7,8-PeCDF-13C	2.00	83
2,3,7,8-TCDD	-----	0.54	0.16 IJ		2,3,4,7,8-PeCDF-13C	2.00	87
Total TCDD	5.8	----	0.16		1,2,3,7,8-PeCDD-13C	2.00	90
					1,2,3,4,7,8-HxCDF-13C	2.00	87
1,2,3,7,8-PeCDF	1.3	----	0.13 J		1,2,3,6,7,8-HxCDF-13C	2.00	83
2,3,4,7,8-PeCDF	2.1	----	0.094 J		2,3,4,6,7,8-HxCDF-13C	2.00	83
Total PeCDF	28	----	0.094		1,2,3,7,8,9-HxCDF-13C	2.00	74
					1,2,3,4,7,8-HxCDD-13C	2.00	82
1,2,3,7,8-PeCDD	4.8	----	0.21 J		1,2,3,6,7,8-HxCDD-13C	2.00	83
Total PeCDD	16	----	0.21		1,2,3,4,6,7,8-HpCDF-13C	2.00	66
					1,2,3,4,7,8,9-HpCDF-13C	2.00	65
1,2,3,4,7,8-HxCDF	3.8	----	0.11 J		1,2,3,4,6,7,8-HpCDD-13C	2.00	76
1,2,3,6,7,8-HxCDF	4.1	----	0.089 J		OCDD-13C	4.00	77 Y
2,3,4,6,7,8-HxCDF	2.2	----	0.045 J				
1,2,3,7,8,9-HxCDF	0.77	----	0.25 J		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	54	----	0.045		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	5.5	----	0.19 J		2,3,7,8-TCDD-37Cl4	0.20	60
1,2,3,6,7,8-HxCDD	9.3	----	0.078				
1,2,3,7,8,9-HxCDD	9.0	----	0.14				
Total HxCDD	74	----	0.078				
1,2,3,4,6,7,8-HpCDF	25	----	0.20		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	-----	1.6	0.23 IJ		Equivalence: 30 ng/Kg		
Total HpCDF	60	----	0.20		(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	120	----	0.16				
Total HpCDD	310	----	0.16				
OCDF	45	----	0.14				
OCDD	1600	----	0.47				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

J = Estimated value

I = Isotope ratio out of specification

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-07		
Lab Sample ID	10643743002		
Filename	L230303A_04		
Injected By	SMT		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	20.2	Dilution	NA
Dry Weight Extracted	8.18 g	Collected	02/16/2023 13:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 07:14

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	1.9	----	0.058		2,3,7,8-TCDF-13C	2.00	85
Total TCDF	33	----	0.058		2,3,7,8-TCDD-13C	2.00	79
					1,2,3,7,8-PeCDF-13C	2.00	85
2,3,7,8-TCDD	0.46	----	0.084	J	2,3,4,7,8-PeCDF-13C	2.00	95
Total TCDD	13	----	0.084		1,2,3,7,8-PeCDD-13C	2.00	94
					1,2,3,4,7,8-HxCDF-13C	2.00	95
1,2,3,7,8-PeCDF	1.6	----	0.39	J	1,2,3,6,7,8-HxCDF-13C	2.00	89
2,3,4,7,8-PeCDF	2.7	----	0.19	J	2,3,4,6,7,8-HxCDF-13C	2.00	85
Total PeCDF	29	----	0.19		1,2,3,7,8,9-HxCDF-13C	2.00	79
					1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	2.0	----	0.072	J	1,2,3,6,7,8-HxCDD-13C	2.00	82
Total PeCDD	16	----	0.072		1,2,3,4,6,7,8-HpCDF-13C	2.00	55
					1,2,3,4,7,8,9-HpCDF-13C	2.00	71
1,2,3,4,7,8-HxCDF	2.2	----	0.087	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	80
1,2,3,6,7,8-HxCDF	1.2	----	0.12	J	OCDD-13C	4.00	84 Y
2,3,4,6,7,8-HxCDF	2.4	----	0.097	J			
1,2,3,7,8,9-HxCDF	0.92	----	0.097	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	53	----	0.087		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	2.6	----	0.45	J	2,3,7,8-TCDD-37Cl4	0.20	68
1,2,3,6,7,8-HxCDD	17	----	0.31				
1,2,3,7,8,9-HxCDD	8.2	----	0.46				
Total HxCDD	120	----	0.31				
1,2,3,4,6,7,8-HpCDF	39	----	0.18		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	2.8	----	0.29	J	Equivalence: 74 ng/Kg		
Total HpCDF	180	----	0.18		(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	500	----	0.59				
Total HpCDD	940	----	0.59				
OCDF	83	----	0.35				
OCDD	3700	----	0.57				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

EDL = Estimated Detection Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

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J = Estimated value

Y = Calculated using average of daily RfCs

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-08		
Lab Sample ID	10643743003		
Filename	L230303A_05		
Injected By	SMT		
Total Amount Extracted	10.6 g	Matrix	Solid
% Moisture	23.6	Dilution	NA
Dry Weight Extracted	8.12 g	Collected	02/16/2023 13:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 07:58

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	3.7	----	0.58		2,3,7,8-TCDF-13C	2.00	84
Total TCDF	48	----	0.58		2,3,7,8-TCDD-13C	2.00	80
					1,2,3,7,8-PeCDF-13C	2.00	90
2,3,7,8-TCDD	0.39	----	0.19	J	2,3,4,7,8-PeCDF-13C	2.00	93
Total TCDD	14	----	0.19		1,2,3,7,8-PeCDD-13C	2.00	96
					1,2,3,4,7,8-HxCDF-13C	2.00	97
1,2,3,7,8-PeCDF	2.1	----	0.76	J	1,2,3,6,7,8-HxCDF-13C	2.00	89
2,3,4,7,8-PeCDF	3.2	----	0.035	J	2,3,4,6,7,8-HxCDF-13C	2.00	85
Total PeCDF	37	----	0.035		1,2,3,7,8,9-HxCDF-13C	2.00	80
					1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	0.89	----	0.12	J	1,2,3,6,7,8-HxCDD-13C	2.00	84
Total PeCDD	14	----	0.12		1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	67
1,2,3,4,7,8-HxCDF	3.2	----	0.10	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	76
1,2,3,6,7,8-HxCDF	2.7	----	0.11	J	OCDD-13C	4.00	75 Y
2,3,4,6,7,8-HxCDF	3.1	----	0.14	J			
1,2,3,7,8,9-HxCDF	0.92	----	0.068	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	36	----	0.068		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.3	----	0.26	J	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	2.6	----	0.30	J			
1,2,3,7,8,9-HxCDD	1.9	----	0.14	J			
Total HxCDD	27	----	0.14				
1,2,3,4,6,7,8-HpCDF	22	----	0.62		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	----	1.2	0.55	IJ	Equivalence: 16 ng/Kg		
Total HpCDF	40	----	0.55		(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	41	----	0.23				
Total HpCDD	82	----	0.23				
OCDF	18	----	0.44				
OCDD	270	----	0.40				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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I = Isotope ratio out of specification

Y = Calculated using average of daily RFs

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-09		
Lab Sample ID	10643743004		
Filename	L230303A_06		
Injected By	SMT		
Total Amount Extracted	10.4 g	Matrix	Solid
% Moisture	19.9	Dilution	NA
Dry Weight Extracted	8.35 g	Collected	02/16/2023 12:00
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 08:43

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.49	----	0.12	J	2,3,7,8-TCDF-13C	2.00	88
Total TCDF	7.0	----	0.12		2,3,7,8-TCDD-13C	2.00	84
					1,2,3,7,8-PeCDF-13C	2.00	97
2,3,7,8-TCDD	0.21	----	0.089	J	2,3,4,7,8-PeCDF-13C	2.00	102
Total TCDD	1.7	----	0.089		1,2,3,7,8-PeCDD-13C	2.00	108
					1,2,3,4,7,8-HxCDF-13C	2.00	98
1,2,3,7,8-PeCDF	0.57	----	0.34	J	1,2,3,6,7,8-HxCDF-13C	2.00	92
2,3,4,7,8-PeCDF	1.1	----	0.29	J	2,3,4,6,7,8-HxCDF-13C	2.00	90
Total PeCDF	18	----	0.29		1,2,3,7,8,9-HxCDF-13C	2.00	80
					1,2,3,4,7,8-HxCDD-13C	2.00	97
1,2,3,7,8-PeCDD	0.39	----	0.14	J	1,2,3,6,7,8-HxCDD-13C	2.00	95
Total PeCDD	3.0	----	0.14	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	77
					1,2,3,4,7,8,9-HpCDF-13C	2.00	74
1,2,3,4,7,8-HxCDF	0.81	----	0.080	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	84
1,2,3,6,7,8-HxCDF	----	0.67	0.070	IJ	OCDD-13C	4.00	82 Y
2,3,4,6,7,8-HxCDF	1.2	----	0.075	J			
1,2,3,7,8,9-HxCDF	0.51	----	0.038	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	16	----	0.038		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	----	0.50	0.089	IJ	2,3,7,8-TCDD-37Cl4	0.20	70
1,2,3,6,7,8-HxCDD	1.1	----	0.070	J			
1,2,3,7,8,9-HxCDD	0.80	----	0.093	J			
Total HxCDD	9.3	----	0.070				
1,2,3,4,6,7,8-HpCDF	6.7	----	0.15		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.48	----	0.19	J	Equivalence: 5.2 ng/Kg		
Total HpCDF	12	----	0.15		(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	12	----	0.16				
Total HpCDD	24	----	0.16				
OCDF	6.6	----	0.15	J			
OCDD	95	----	0.16				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

EDL = Estimated Detection Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

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J = Estimated value

I = Isotope ratio out of specification

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-10		
Lab Sample ID	10643743005		
Filename	L230303A_07		
Injected By	SMT		
Total Amount Extracted	10.8 g	Matrix	Solid
% Moisture	5.7	Dilution	NA
Dry Weight Extracted	10.2 g	Collected	02/16/2023 12:00
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 09:27

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	2.8	----	0.80		2,3,7,8-TCDF-13C	2.00	95
Total TCDF	140	----	0.80		2,3,7,8-TCDD-13C	2.00	79
					1,2,3,7,8-PeCDF-13C	2.00	82
2,3,7,8-TCDD	0.28	----	0.064	J	2,3,4,7,8-PeCDF-13C	2.00	86
Total TCDD	30	----	0.064		1,2,3,7,8-PeCDD-13C	2.00	105
					1,2,3,4,7,8-HxCDF-13C	2.00	115
1,2,3,7,8-PeCDF	----	47	0.11	P	1,2,3,6,7,8-HxCDF-13C	2.00	89
2,3,4,7,8-PeCDF	----	14	0.071	P	2,3,4,6,7,8-HxCDF-13C	2.00	88
Total PeCDF	140	----	0.071		1,2,3,7,8,9-HxCDF-13C	2.00	88
					1,2,3,4,7,8-HxCDD-13C	2.00	96
1,2,3,7,8-PeCDD	1.5	----	0.20	J	1,2,3,6,7,8-HxCDD-13C	2.00	90
Total PeCDD	35	----	0.20		1,2,3,4,6,7,8-HpCDF-13C	2.00	75
					1,2,3,4,7,8,9-HpCDF-13C	2.00	75
1,2,3,4,7,8-HxCDF	9.3	----	0.080		1,2,3,4,6,7,8-HpCDD-13C	2.00	85
1,2,3,6,7,8-HxCDF	----	9.1	0.14	P	OCDD-13C	4.00	67 Y
2,3,4,6,7,8-HxCDF	12	----	0.10				
1,2,3,7,8,9-HxCDF	----	2.6	0.077	PJ	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	120	----	0.077		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.9	----	0.14	J	2,3,7,8-TCDD-37Cl4	0.20	67
1,2,3,6,7,8-HxCDD	3.4	----	0.19	J			
1,2,3,7,8,9-HxCDD	2.1	----	0.14	J			
Total HxCDD	56	----	0.14				
1,2,3,4,6,7,8-HpCDF	120	----	0.29		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.7	----	0.22	J	Equivalence: 62 ng/Kg		
Total HpCDF	130	----	0.22		(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	22	----	0.15				
Total HpCDD	56	----	0.15				
OCDF	25	----	0.31				
OCDD	160	----	0.13				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

J = Estimated value

P = PCDE Interference

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-11		
Lab Sample ID	10643743006		
Filename	L230303A_08		
Injected By	SMT		
Total Amount Extracted	12.1 g	Matrix	Solid
% Moisture	23.6	Dilution	NA
Dry Weight Extracted	9.26 g	Collected	02/16/2023 12:00
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 10:12

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	6.3	----	0.58		2,3,7,8-TCDF-13C	2.00	83
Total TCDF	170	----	0.58		2,3,7,8-TCDD-13C	2.00	79
					1,2,3,7,8-PeCDF-13C	2.00	92
2,3,7,8-TCDD	0.51	----	0.30	J	2,3,4,7,8-PeCDF-13C	2.00	94
Total TCDD	21	----	0.30		1,2,3,7,8-PeCDD-13C	2.00	98
					1,2,3,4,7,8-HxCDF-13C	2.00	94
1,2,3,7,8-PeCDF	5.1	----	0.19	J	1,2,3,6,7,8-HxCDF-13C	2.00	89
2,3,4,7,8-PeCDF	9.9	----	0.22		2,3,4,6,7,8-HxCDF-13C	2.00	87
Total PeCDF	110	----	0.19		1,2,3,7,8,9-HxCDF-13C	2.00	78
					1,2,3,4,7,8-HxCDD-13C	2.00	88
1,2,3,7,8-PeCDD	1.3	----	0.18	J	1,2,3,6,7,8-HxCDD-13C	2.00	86
Total PeCDD	21	----	0.18		1,2,3,4,6,7,8-HpCDF-13C	2.00	72
					1,2,3,4,7,8,9-HpCDF-13C	2.00	64
1,2,3,4,7,8-HxCDF	8.0	----	0.13		1,2,3,4,6,7,8-HpCDD-13C	2.00	74
1,2,3,6,7,8-HxCDF	6.4	----	0.084		OCDD-13C	4.00	68 Y
2,3,4,6,7,8-HxCDF	7.9	----	0.084				
1,2,3,7,8,9-HxCDF	2.5	----	0.14	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	81	----	0.084		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.2	----	0.42	J	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	2.6	----	0.099	J			
1,2,3,7,8,9-HxCDD	1.9	----	0.11	J			
Total HxCDD	28	----	0.099				
1,2,3,4,6,7,8-HpCDF	26	----	0.21		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	2.8	----	0.30	J	Equivalence: 27 ng/Kg		
Total HpCDF	42	----	0.21		(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	33	----	0.15				
Total HpCDD	59	----	0.15				
OCDF	14	----	0.28				
OCDD	160	----	0.30				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

EDL = Estimated Detection Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

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J = Estimated value

Y = Calculated using average of daily RfS

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-12		
Lab Sample ID	10643743007		
Filename	L230303A_09		
Injected By	SMT		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	13.3	Dilution	NA
Dry Weight Extracted	8.87 g	Collected	02/16/2023 14:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 10:56

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.29	2,3,7,8-TCDF-13C	2.00	84
Total TCDF	2.8	----	0.29	2,3,7,8-TCDD-13C	2.00	80
				1,2,3,7,8-PeCDF-13C	2.00	100
2,3,7,8-TCDD	ND	----	0.069	2,3,4,7,8-PeCDF-13C	2.00	99
Total TCDD	ND	----	0.069	1,2,3,7,8-PeCDD-13C	2.00	107
				1,2,3,4,7,8-HxCDF-13C	2.00	95
1,2,3,7,8-PeCDF	ND	----	0.23	1,2,3,6,7,8-HxCDF-13C	2.00	88
2,3,4,7,8-PeCDF	0.35	----	0.18 J	2,3,4,6,7,8-HxCDF-13C	2.00	89
Total PeCDF	7.3	----	0.18	1,2,3,7,8,9-HxCDF-13C	2.00	79
				1,2,3,4,7,8-HxCDD-13C	2.00	93
1,2,3,7,8-PeCDD	----	0.19	0.12 IJ	1,2,3,6,7,8-HxCDD-13C	2.00	88
Total PeCDD	1.0	----	0.12 J	1,2,3,4,6,7,8-HpCDF-13C	2.00	74
				1,2,3,4,7,8,9-HpCDF-13C	2.00	69
1,2,3,4,7,8-HxCDF	0.53	----	0.070 J	1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	0.37	----	0.073 J	OCDD-13C	4.00	74 Y
2,3,4,6,7,8-HxCDF	----	0.49	0.067 IJ			
1,2,3,7,8,9-HxCDF	0.29	----	0.053 J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	7.4	----	0.053	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.39	----	0.23 J	2,3,7,8-TCDD-37Cl4	0.20	66
1,2,3,6,7,8-HxCDD	0.66	----	0.090 J			
1,2,3,7,8,9-HxCDD	0.52	----	0.043 J			
Total HxCDD	6.7	----	0.043			
1,2,3,4,6,7,8-HpCDF	3.4	----	0.074 J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.11	Equivalence: 3.4 ng/Kg		
Total HpCDF	6.8	----	0.074	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	16	----	0.19			
Total HpCDD	32	----	0.19			
OCDF	5.0	----	0.21 J			
OCDD	140	----	0.18			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

EDL = Estimated Detection Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

J = Estimated value

I = Isotope ratio out of specification

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-13		
Lab Sample ID	10643743008		
Filename	L230303A_10		
Injected By	SMT		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	20.3	Dilution	NA
Dry Weight Extracted	8.14 g	Collected	02/16/2023 14:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 11:41

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	34	----	0.15	2,3,7,8-TCDF-13C	2.00	77
Total TCDF	560	----	0.15	2,3,7,8-TCDD-13C	2.00	76
				1,2,3,7,8-PeCDF-13C	2.00	81
2,3,7,8-TCDD	3.3	----	0.061	2,3,4,7,8-PeCDF-13C	2.00	85
Total TCDD	120	----	0.061	1,2,3,7,8-PeCDD-13C	2.00	93
				1,2,3,4,7,8-HxCDF-13C	2.00	87
1,2,3,7,8-PeCDF	9.6	----	2.9	1,2,3,6,7,8-HxCDF-13C	2.00	79
2,3,4,7,8-PeCDF	22	----	0.88	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	230	----	0.88	1,2,3,7,8,9-HxCDF-13C	2.00	70
				1,2,3,4,7,8-HxCDD-13C	2.00	76
1,2,3,7,8-PeCDD	3.1	----	0.28 J	1,2,3,6,7,8-HxCDD-13C	2.00	76
Total PeCDD	51	----	0.28	1,2,3,4,6,7,8-HpCDF-13C	2.00	58
				1,2,3,4,7,8,9-HpCDF-13C	2.00	56
1,2,3,4,7,8-HxCDF	6.2	----	0.090	1,2,3,4,6,7,8-HpCDD-13C	2.00	64
1,2,3,6,7,8-HxCDF	5.6	----	0.11 J	OCDD-13C	4.00	55 Y
2,3,4,6,7,8-HxCDF	8.7	----	0.11			
1,2,3,7,8,9-HxCDF	1.5	----	0.13 J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	110	----	0.090	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.4	----	0.13 J	2,3,7,8-TCDD-37Cl4	0.20	61
1,2,3,6,7,8-HxCDD	3.3	----	0.11 J			
1,2,3,7,8,9-HxCDD	2.6	----	0.11 J			
Total HxCDD	42	----	0.11			
1,2,3,4,6,7,8-HpCDF	46	----	0.15	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.4	----	0.25 J	Equivalence: 54 ng/Kg		
Total HpCDF	57	----	0.15	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	19	----	0.17			
Total HpCDD	39	----	0.17			
OCDF	24	----	0.34			
OCDD	80	----	0.19			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

EDL = Estimated Detection Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

J = Estimated value

Y = Calculated using average of daily RfS

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-14		
Lab Sample ID	10643743009		
Filename	L230303A_11		
Injected By	SMT		
Total Amount Extracted	10.6 g	Matrix	Solid
% Moisture	21.6	Dilution	NA
Dry Weight Extracted	8.35 g	Collected	02/16/2023 14:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 12:25

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	8.5	----	0.36		2,3,7,8-TCDF-13C	2.00	62
Total TCDF	300	----	0.36		2,3,7,8-TCDD-13C	2.00	59
					1,2,3,7,8-PeCDF-13C	2.00	72
2,3,7,8-TCDD	0.69	----	0.28	J	2,3,4,7,8-PeCDF-13C	2.00	75
Total TCDD	26	----	0.28		1,2,3,7,8-PeCDD-13C	2.00	77
					1,2,3,4,7,8-HxCDF-13C	2.00	73
1,2,3,7,8-PeCDF	----	4.7	0.33	PJ	1,2,3,6,7,8-HxCDF-13C	2.00	67
2,3,4,7,8-PeCDF	11	----	0.17		2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	130	----	0.17		1,2,3,7,8,9-HxCDF-13C	2.00	59
					1,2,3,4,7,8-HxCDD-13C	2.00	68
1,2,3,7,8-PeCDD	1.4	----	0.21	J	1,2,3,6,7,8-HxCDD-13C	2.00	67
Total PeCDD	19	----	0.21		1,2,3,4,6,7,8-HpCDF-13C	2.00	58
					1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	5.8	----	0.12	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	5.4	----	0.14	J	OCDD-13C	4.00	58 Y
2,3,4,6,7,8-HxCDF	7.0	----	0.088				
1,2,3,7,8,9-HxCDF	1.0	----	0.094	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	74	----	0.088		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.3	----	0.18	J	2,3,7,8-TCDD-37Cl4	0.20	65
1,2,3,6,7,8-HxCDD	----	0.80	0.10	IJ			
1,2,3,7,8,9-HxCDD	----	0.53	0.085	IJ			
Total HxCDD	11	----	0.085				
1,2,3,4,6,7,8-HpCDF	33	----	0.14		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.63	----	0.32	J	Equivalence: 27 ng/Kg		
Total HpCDF	37	----	0.14		(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	3.3	----	0.16	J			
Total HpCDD	7.5	----	0.16				
OCDF	4.0	----	0.21	J			
OCDD	10	----	0.30	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

EDL = Estimated Detection Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

J = Estimated value

P = PCDE Interference

I = Isotope ratio out of specification

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Blank Analysis Results

Lab Sample Name	DFBLKVS	Matrix	Solid
Lab Sample ID	BLANK-104255	Dilution	NA
Filename	L230301B_07	Extracted	02/27/2023 11:50
Total Amount Extracted	10.4 g	Analyzed	03/01/2023 19:06
ICAL ID	L230225	Injected By	SMT
CCal Filename(s)	L230301A_17 & L230301B_17		

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.100	2,3,7,8-TCDF-13C	2.00	88
Total TCDF	ND	----	0.100	2,3,7,8-TCDD-13C	2.00	70
				1,2,3,7,8-PeCDF-13C	2.00	98
2,3,7,8-TCDD	ND	----	0.12	2,3,4,7,8-PeCDF-13C	2.00	92
Total TCDD	ND	----	0.12	1,2,3,7,8-PeCDD-13C	2.00	90
				1,2,3,4,7,8-HxCDF-13C	2.00	100
1,2,3,7,8-PeCDF	ND	----	0.069	1,2,3,6,7,8-HxCDF-13C	2.00	93
2,3,4,7,8-PeCDF	ND	----	0.069	2,3,4,6,7,8-HxCDF-13C	2.00	91
Total PeCDF	ND	----	0.069	1,2,3,7,8,9-HxCDF-13C	2.00	88
				1,2,3,4,7,8-HxCDD-13C	2.00	82
1,2,3,7,8-PeCDD	ND	----	0.10	1,2,3,6,7,8-HxCDD-13C	2.00	83
Total PeCDD	ND	----	0.10	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	58
1,2,3,4,7,8-HxCDF	ND	----	0.075	1,2,3,4,6,7,8-HpCDD-13C	2.00	80 Y
1,2,3,6,7,8-HxCDF	ND	----	0.050	OCDD-13C	4.00	63 Y
2,3,4,6,7,8-HxCDF	ND	----	0.066			
1,2,3,7,8,9-HxCDF	ND	----	0.11	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.050	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	----	0.20	0.084 J	2,3,7,8-TCDD-37Cl4	0.20	73
1,2,3,6,7,8-HxCDD	ND	----	0.099			
1,2,3,7,8,9-HxCDD	ND	----	0.10			
Total HxCDD	ND	----	0.084			
1,2,3,4,6,7,8-HpCDF	ND	----	0.12	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.19	Equivalence: 0.043 ng/Kg		
Total HpCDF	ND	----	0.12	(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	----	0.21	0.18 J			
Total HpCDD	0.21	----	0.18 J			
OCDF	ND	----	0.33			
OCDD	ND	----	0.65			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

EDL = Estimated Detection Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

J = Estimated value

I = Isotope ratio out of specification

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-104256	Matrix	Solid
Filename	L230301B_01	Dilution	NA
Total Amount Extracted	10.2 g	Extracted	02/27/2023 11:50
ICAL ID	L230225	Analyzed	03/01/2023 14:39
CCal Filename(s)	L230301A_17 & L230301B_17	Injected By	SMT
Method Blank ID	BLANK-104255		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.21	104	2,3,7,8-TCDF-13C	2.0	86
Total TCDF				2,3,7,8-TCDD-13C	2.0	68
				1,2,3,7,8-PeCDF-13C	2.0	93
2,3,7,8-TCDD	0.20	0.22	111	2,3,4,7,8-PeCDF-13C	2.0	90
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	85
				1,2,3,4,7,8-HxCDF-13C	2.0	100
1,2,3,7,8-PeCDF	1.0	1.0	101	1,2,3,6,7,8-HxCDF-13C	2.0	95
2,3,4,7,8-PeCDF	1.0	1.0	101	2,3,4,6,7,8-HxCDF-13C	2.0	93
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	81
				1,2,3,4,7,8-HxCDD-13C	2.0	86
1,2,3,7,8-PeCDD	1.0	0.99	99	1,2,3,6,7,8-HxCDD-13C	2.0	88
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	65
				1,2,3,4,7,8,9-HpCDF-13C	2.0	61
1,2,3,4,7,8-HxCDF	1.0	1.0	103	1,2,3,4,6,7,8-HpCDD-13C	2.0	84 Y
1,2,3,6,7,8-HxCDF	1.0	1.0	105	OCDD-13C	4.0	67 Y
2,3,4,6,7,8-HxCDF	1.0	1.0	103			
1,2,3,7,8,9-HxCDF	1.0	1.0	101	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	1.1	111	2,3,7,8-TCDD-37Cl4	0.20	74
1,2,3,6,7,8-HxCDD	1.0	0.99	99			
1,2,3,7,8,9-HxCDD	1.0	0.95	95			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	1.1	107			
1,2,3,4,7,8,9-HpCDF	1.0	1.0	104			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.98	98			
Total HpCDD						
OCDF	2.0	2.5	125			
OCDD	2.0	2.3	113			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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ESS Laboratory Sample and Cooler Receipt Checklist

Client: Weston and Sampson Engineers, Inc - TB

ESS Project ID: 23B0634

Date Received: 2/17/2023

Project Due Date: 2/27/2023

Days for Project: 5 Day

Shipped/Delivered Via: ESS Courier

1. Air bill manifest present?
Air No.: NA

6. Does COC match bottles?

2. Were custody seals present?

7. Is COC complete and correct?

3. Is radiation count <100 CPM?

8. Were samples received intact?

4. Is a Cooler Present?
Temp: -0.4 Iced with: Ice

9. Were labs informed about short holds & rushes? Yes / No / NA

10. Were any analyses received outside of hold time? Yes / No

5. Was COC signed and dated by client?

11. Any Subcontracting needed? Yes / No
ESS Sample IDs: _____
Analysis: _____
TAT: _____

12. Were VOAs received? Yes / No
a. Air bubbles in aqueous VOAs? Yes / No
b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
a. If metals preserved upon receipt: Date: _____
b. Low Level VOA vials frozen: Date: _____

Time: _____ By/Acid Lot#: _____
Time: _____ By: _____

Sample Receiving Notes:

samples split for sub analysis

14. Was there a need to contact Project Manager? Yes / No
a. Was there a need to contact the client? Yes / No
Who was contacted? _____ Date: _____

Time: _____ By: _____

Resolution: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	401152	Yes	N/A	Yes	8 oz jar	NP	
1	401153	Yes	N/A	Yes	8 oz jar	NP	
2	401154	Yes	N/A	Yes	8 oz jar	NP	
2	401155	Yes	N/A	Yes	8 oz jar	NP	
2	401191	Yes	N/A	Yes	2 oz. Jar	NP	
3	401156	Yes	N/A	Yes	8 oz jar	NP	
3	401270	Yes	N/A	Yes	4 oz. Jar	NP	
4	401158	Yes	N/A	Yes	8 oz jar	NP	
4	401159	Yes	N/A	Yes	8 oz jar	NP	
4	401164	Yes	N/A	Yes	8 oz jar	NP	
5	401160	Yes	N/A	Yes	8 oz jar	NP	
5	401161	Yes	N/A	Yes	8 oz jar	NP	
5	401165	Yes	N/A	Yes	8 oz jar	NP	
6	401162	Yes	N/A	Yes	8 oz jar	NP	
6	401163	Yes	N/A	Yes	8 oz jar	NP	
7	401166	Yes	N/A	Yes	8 oz jar	NP	
7	401168	Yes	N/A	Yes	2 oz. Jar	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Weston and Sampson Engineers, Inc - TB

ESS Project ID: 23B0634

Date Received: 2/17/2023

7	401271	Yes	N/A	Yes	4 oz. Jar	NP
8	401167	Yes	N/A	Yes	8 oz jar	NP
8	401169	Yes	N/A	Yes	2 oz. Jar	NP
8	401272	Yes	N/A	Yes	4 oz. Jar	NP
9	401170	Yes	N/A	Yes	8 oz jar	NP
9	401202	Yes	N/A	Yes	8 oz jar	NP
10	401171	Yes	N/A	Yes	8 oz jar	NP
10	401181	Yes	N/A	Yes	2 oz. Jar	NP
10	401273	Yes	N/A	Yes	4 oz. Jar	NP
11	401172	Yes	N/A	Yes	8 oz jar	NP
11	401182	Yes	N/A	Yes	2 oz. Jar	NP
11	401274	Yes	N/A	Yes	4 oz. Jar	NP
12	401173	Yes	N/A	Yes	8 oz jar	NP
12	401183	Yes	N/A	Yes	8 oz jar	NP
13	401174	Yes	N/A	Yes	8 oz jar	NP
13	401184	Yes	N/A	Yes	8 oz jar	NP
13	401275	Yes	N/A	Yes	4 oz. Jar	NP
14	401175	Yes	N/A	Yes	8 oz jar	NP
14	401185	Yes	N/A	Yes	8 oz jar	NP
15	401176	Yes	N/A	Yes	8 oz jar	NP
15	401203	Yes	N/A	Yes	8 oz jar	NP
16	401177	Yes	N/A	Yes	8 oz jar	NP
16	401186	Yes	N/A	Yes	8 oz jar	NP
17	401178	Yes	N/A	Yes	8 oz jar	NP
17	401187	Yes	N/A	Yes	8 oz jar	NP
18	401179	Yes	N/A	Yes	8 oz jar	NP
18	401190	Yes	N/A	Yes	2 oz. Jar	NP
18	401276	Yes	N/A	Yes	4 oz. Jar	NP
19	401188	Yes	N/A	Yes	8 oz jar	NP
19	401189	Yes	N/A	Yes	8 oz jar	NP

2nd Review

Were all containers scanned into storage/lab?

Are barcode labels on correct containers?

Are all Flashpoint stickers attached/container ID # circled?

Are all Hex Chrome stickers attached?

Are all QC stickers attached?

Are VOA stickers attached if bubbles noted?

Initials C

Yes / No
Yes / No / NA
Yes / No / NA
Yes / No / NA
Yes / No / NA

Completed

By: [Signature]

Date & Time: 11:46 2/21/23

Reviewed

By: [Signature]

Date & Time: 1430 2/21/23



ESS Lab #	034	Page	1	of	2
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ELECTRONIC DELIVERABLES (Final Reports are PDF)

☒ Limit Checker ☒ State Forms ☐ EQuIS
☒ Excel ☐ State Upload ☒ Enviro Data
☐ CIP-like Package ☐ Other (Specify) →

REQUESTED ANALYSES

Client:	WESTON + SAMSON	Project
Address:	55 WALKERS BROOK DRIVE READING	Project
Phone:	978 818 9212	Project
Email Distribution List:	KOSKAL@WSEINC.COM BHUNIAP@WSEINC.COM	

Project Name: CLAYTON FIELD
Project Location: NEEDHAM MA
Project Number:
Project Manager: L. KOSKA
Bill to: L. KOSKA
PON:
Quote#: SEE T BYLINE QUOTE

Client acknowledges that sampling is compliant with all EPA / State regulatory programs

Total Number of Bottles

Total Number of Bottles

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	MO	AS	PA	DI	EF	JS
1	2/16/23	1045	6	Soil	B-201 (0-1)	X	X	X	X		
2	T	1045	T	T	B-201 (2-4)	X	X	X	X		
3		1045			B-201 (4-6)	X	X	X	X		
4		1015			B-202 (0-1)	X	X	X	X		
5		1015			B-202 (2-4)	X	X	X	X		
6		1330			B-203 (0-1)	X	X	X	X		
7		1330			B-203 (2-4)	X	X	X	X		
8		1330			B-203 (4-6)	X	X	X	X		
9		1200			B-204 (0-1)	X	X	X	X		
10	T	1200	T	T	B-204 (2-4)	X	X	X	X		

2
3
1
3
3
2
2
1
2
1

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial
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Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*
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Preservation Code: 1-Non Preserved 2-HCl 3-H₂SO₄ 4-HNO₃ 5-NaOH 6-Methanol 7-Na₂SO₃ 8-ZnAc₂, NaOH 9-NH₄Cl 10-DI H₂O 11-Other*

Sampled by: MC6012E

Chain needs to be filled out neatly and completely for on time delivery.

Laboratory Use Only

Comments: * Please specify "Other" preservative and containers types in this space

Cooler Temperature (°C):

All samples submitted are subject to ESS Laboratory's payment terms and conditions.

Dissolved Filtration

☐ Lab Filter

Relinquished by (Signature)

Date _____

Time

Received by (Signature) _____

Relinquished by (Signature)

Date: _____

Time

Received by (Signature) _____

Relinquished by (Signature)

Date _____

Time

Received by (Signature) _____

Relinquished by (Signature)

Date _____

1999

Received by (Signature) _____



185 Frances Avenue
Cranston, RI 02910
Phone: 401-461-7181
Fax: 401-461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1030 Page 2 of 2

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CLIENT INFORMATION

Client: WESTON + SAMPSON
Address: 55 WALKERS BROOK
DRIVE READING MA
Phone: 978 218 9212
Email: KOSKAL@WSEINC.COM
Distribution List: BHUNIAP@WSEINC.COM

PROJECT INFORMATION

Project Name: CLAXTON FIELD
Project Location: NEEDHAM, MA
Project Number:
Project Manager: L. KOSKA
Bill to: " " " "
PO#: " " " "
Quote#: SEE T. BYRNE QUOTE 1/3/23

Client acknowledges that sampling is compliant with all EPA / State regulatory programs

REQUESTED ANALYSES

MCP 14 METAL
ARRESTES (PLM)
DIOXINS
GALVANIC
GALVANIC

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Total Number of Bottles
11	2/16/23	1730	G	S	B-204 (4-6)	2
12		1430			B-205 (0-1)	2
13		1430			B-203 (2-4)	2
14		1430			B-205 (4-6)	2
15		1515			B-206 (0-1)	2
16		1515			B-206 (2-4)	2
17		1515			B-206 (4-5)	2
18		1530			B-207 F (4-6)	2
19		1400			CF - STOCKPILE	2

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAc2, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Sampled by: MCBUTRE

Chain needs to be filled out neatly and completely for on time delivery.

Laboratory Use Only

Comments: * Please specify "Other" preservative and containers types in this space

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Dissolved Filtration

☐ Lab Filter

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
	2/16/23	1730					