CONTRACT DOCUMENTS AND SPECIFICATIONS

for

OSPREY LANDING WATER TANK REMEDIAL IMPLEMENTATION WORK

Bid Proposal #15-18

John P. Bohenko, City Manager
City of Portsmouth, New Hampshire

Prepared by:

City of Portsmouth
Engineering Division
Public Works Department

and

Ransom Consulting, Inc.
112 Corporate Drive
Portsmouth, New Hampshire

January 29, 2018

CONTRACT DOCUMENTS AND SPECIFICATIONS

TABLE OF CONTENTS

ATTACHMENTS

Attachment A:	Waste Characterization Results
Attachment B:	September 5, 2017 Remedial Action Plan & November 28, 2017 Supplemental Subsurface Investigation

City of Portsmouth
Portsmouth, New Hampshire
Department of Public Works

OSPREY LANDING WATER TANK REMEDIAL IMPLEMENTATION WORK – CONTRACT DOCUMENTS AND SPECIFICATIONS

1.0 INVITATION TO BID

Sealed bid proposals, **plainly marked, Osprey Landing Water Tank Remedial Implementation Work**, Bid Proposal #15-18 **on the outside of the mailing envelope as well as the sealed bid envelope,** addressed to the Finance/Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, New Hampshire, 03801, will be accepted until **3:00 PM** (local time) on **March 15, 2018** at which time all bids will be publicly opened and read aloud.

All questions about the meaning or intent of the bidding documents must be submitted in writing and shall be directed to Jay Johonnett, P.E., Ransom Consulting, Inc. (the Engineer), at jay.johonnett@ransomenv.com. Interpretations or clarifications considered necessary in response to such questions will be issued by Addenda. Deadlines for Engineer's receipt of questions is 2:00 PM (local time) March 8, 2018.

Addenda issued under this Invitation to Bid will NOT be distributed to bidders. It shall be the bidder's responsibility to check the City's website provided for any addenda issued prior to submitting their bid. Bidders must acknowledge receipt of all addenda issued in the space provided in the Bid.

Copies of the Contract Documents and Specifications and all issued addenda may be obtained electronically from the City of Portsmouth Purchasing Department's website http://www.cityofportsmouth.com/finance/purchasing.htm under the project heading.

A **MANDATORY PRE-BID MEETING** for all prospective bidders will be held at 11:00 AM on February 22, 2018, in the first floor conference room at the City of Portsmouth Department of Public Works, 680 Peverly Hill Road, Portsmouth, New Hampshire, and will be followed immediately by a mandatory visit to the project Site, located at 26 Staysail Way, Portsmouth, New Hampshire. Representatives of the City of Portsmouth (the Owner) and Engineer will be present to discuss the project.

The Work of this Contract consists of completing all activities to meet the project objectives including, but not limited to: obtaining any and all permits required to complete the Work (except as otherwise noted herein), soil excavation; protection of existing utilities, structures and other facilities; segregation of soil; providing, installing and maintaining impervious covers for contaminated soil stockpiles; loading, transportation, and proper disposal of contaminated soils; backfilling and restoration of soils to existing grades; and other items detailed in these contract documents and specifications necessary to complete the Work. The Contractor shall furnish all labor, equipment, materials, transportation and tools required to complete the Work. The Work shall begin within 10 days of the Notice to Proceed date unless otherwise specified by the Owner and all work is expected to be substantially completed within 50 days from the Notice to Proceed.

The City of Portsmouth reserves the right to reject any or all bids, to waive technical or legal deficiencies, to re-bid, and to accept any bid that it may deem to be in the best interest of the City.

Each Bidder shall furnish a bid security in the amount of ten percent (10%) of the bid. The Bid Security may be in the form of a certified check drawn upon a bank within the State of New Hampshire or a bid bond executed by a surety company authorized to do business in the State of New Hampshire, made payable to the City of Portsmouth, New Hampshire.

2.0 INSTRUCTIONS TO BIDDERS

BIDDING REQUIREMENTS AND CONDITIONS

1. Special Notice to Bidders

Appended to these instructions is a complete set of bidding and general contract forms. These forms may be detached and executed for the submittal of bids. The plans, specifications, and other documents designated in the proposal form will be considered as part of the proposal, whether attached or not.

The Bidder must submit a statement of qualifications including a written experience statement with pertinent information regarding similar projects, the Bidder's capability to complete the project, including at least three client references for similar projects. Bidder shall identify all Subcontractors, Suppliers, receiving facilities and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for the Work. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, receiving facility, person or organization if requested by Owner. Any subcontractor working on the project will be pre-approved by the City prior to the start of the Work.

Addenda to this proposal, if any, including written answers to questions, will be posted on the City of Portsmouth website at http://www.cityofportsmouth.com/finance/purchasing.htm under the project heading. Addenda and updates will NOT be sent directly to firms. Contractors submitting a proposal should check the website daily for addenda and updates after the release date. Firms should print out, sign and return addenda with the proposal. Failure to do so may result in disqualification.

2. Interpretation of Quantities in Bid Schedules

The quantities appearing in the bid schedule are approximate only and are prepared for the comparison of bids. Payment to the contractor will be made only for actual work performed and accepted in accordance with the contract. Any scheduled item of work to be done and materials to be furnished may be increased, decreased or omitted as hereinafter provided, and no claim for loss, anticipated profits or costs incurred in anticipation of work not ultimately performed will be allowed due to such increase or decrease.

3. Examination of Plans, Specifications and Site Work

The bidder is expected to examine carefully the site of the proposed work, the plans, reports, standard specifications, supplemental specifications, special provisions and contract forms before submitting a proposal. The submission of a bid shall be considered conclusive evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the contract. It will be conclusive evidence that the bidder has also investigated and is satisfied with the sources of supply for all materials.

4. Familiarity with Laws

The bidder is assumed to have made himself or herself familiar with all federal and state laws and all local by-laws, ordinances and regulations which in any manner affect those engaged or employed on the work or affect the materials or equipment used in the work or affect the conduct of the work, and the bidder, if awarded the contract, shall be obligated to perform the work in conformity with said laws, by-laws, ordinances and regulations notwithstanding its ignorance thereof. If the bidder shall discover any provision in the plans or specifications which is in conflict with any such law, by-law, ordinance or regulation the bidder shall forthwith report it to the Engineer in writing.

5. Preparation of Proposal

a) The bidder shall submit its proposal upon the forms furnished by the Owner. The bidder shall specify a unit price in figures, for each pay item for which a quantity is given and shall also show the products of the respective prices and quantities written in figures in the column provided for that purpose and the total amount of the proposal obtained by adding the amount of the several items. All words and figures shall be in ink or typed.

If a unit price or a lump sum bid already entered by the bidder on the proposal form is to be altered it should be crossed out with ink, the new unit price or lump sum bid entered above or below it and initialed by the bidder, also with ink.

b) The bidder's proposal must be signed with ink by the individual, by one or more general partners of a partnership, by one or more members or officers of each firm representing a joint venture; by one or more officers of a corporation, by one or more members (if member-managed) or managers (if manager-managed) of a limited liability company, or by an agent of the contractor legally qualified and acceptable to the owner. If the proposal is made by an individual, his or her name and post office address must be shown; by a partnership, the name and post office address of each general and limited partner must be shown; as a joint venture, the name and post office address of each venturer must be shown; by a corporation, the name of the corporation and its business address must be shown, together with the name of the state in which it is incorporated, and the names, titles and business addresses of the president, secretary and treasurer.

6. Nonconforming Proposals

Proposals will be considered nonconforming and may be rejected in the Owner's sole discretion for any of the following reasons:

- If the proposal is on a form other than that furnished by the Owner, or if the form is altered or any portion thereof is detached;
- If there are unauthorized additions, conditional or altered bids, or irregularities of any kind which may tend to make the proposal or any portion thereof incomplete, indefinite or ambiguous as to its meaning;
- If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award; or
- If the proposal does not contain a unit price for each pay item listed.

7. Proposal Guaranty

No proposal will be considered unless accompanied by a bid bond, surety, or similar guaranty of the types and in an amount not less than the amount indicated in the Invitation to Bid. All sureties shall be made payable to the "City of Portsmouth". If a bid bond is used by the bidder it shall be:

- In a form satisfactory to the Owner;
- With a surety company licensed, authorized to do business in, and subject to the jurisdiction of the courts of the State of New Hampshire; and
- Conditioned upon the faithful performance by the principal of the agreements contained in the sub-bid or the general bid.

In the event any irregularities are contained in the proposal guaranty, the bidder will have four business days (not counting the day of opening) to correct any irregularities. The corrected guaranty must be

received by 4:00 PM. If irregularities are not corrected to the satisfaction of the Owner, the Owner, in its sole discretion, may reject the bid.

8. Delivery of Proposals

When sent by mail, the sealed proposal shall be addressed to the Owner at the address and in the care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the invitation for bids. Proposals received after the time for opening of the bids will be returned to the bidder, unopened.

9. Withdrawal of Proposals

A bidder will be permitted to withdraw his or her proposal unopened after it has been submitted if the Owner receives a request for withdrawal in writing prior to the time specified for opening the proposals.

10. Public Opening of Proposals

Proposals will be opened and read publicly at the time and place indicated in the invitation for bids. Bidders, their authorized agents, and other interested parties are invited to be present.

11. Disqualification of Bidders

Any or all of the following reasons may be deemed by Owner in its sole discretion as being sufficient for the disqualification of a Bidder and the rejection of his proposal:

- More than one proposal for the same work from an individual, firm, or corporation under the same or different name;
- Evidence of collusion among bidders;
- Failure to submit all required information requested in the bid specifications;
- Lack of competency or of adequate machinery, or other equipment, as revealed by the statement of bidder's qualification or otherwise;
- Uncompleted work which, in the judgment of the Owner, might hinder or prevent the prompt completion of additional work if awarded;
- Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts;
- Default or unsatisfactory performance on previous contracts; or
- The Owner may waive any informalities or minor defects or reject any or all bids if it is in the best interests of the Owner or project to do so.

3.0 AWARD AND EXECUTION OF CONTRACT

1. Consideration of Proposals

a) After the proposals are opened and read, they will be compared on the basis of the total price for all sections of work to be charged to perform the work and any such additional considerations as may be identified in the bid documents. The results of such comparisons will be immediately available to the public. In case of a discrepancy between the prices written in words and those written figures, the prices written in words shall govern. In case of a discrepancy between the total shown in the proposal and that obtained by adding the products of the quantities of items and unit bid prices, the latter shall govern.

b) The Owner reserves the right to reject any or all proposals, to waive technicalities or to advertise for new proposals, if, in the sole discretion of the Owner, the best interest of the City of Portsmouth will be promoted thereby.

2. Award of Contract

Owner reserves the right to reject any or all proposals, including without limitation the rights to reject any or all nonconforming, nonresponsive, unbalanced or conditional proposal and to reject the proposal of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the proposal is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner, or for any other reason deemed pertinent to the Owner, without limitation. Owner also reserves the right to waive all informalities not involving price, time or changes in the Work and to negotiate contract terms with the Successful Bidder. In evaluating proposals, Owner will consider the qualifications of Bidders, whether or not the proposals comply with the prescribed requirements, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Intent to Award. Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work.

Within 30 calendar days after the opening of proposals, if a contract is to be awarded, the award will be made to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed, whose evaluation by the Owner indicates to Owner that the award will be in the best interests of the Project. The successful bidder will be notified, in writing, mailed to the address on his or her proposal, that his or her bid has been accepted and that the bidder has been awarded the contract.

The award shall not be considered official until such time that a Purchase Order, or fully executed contract has been issued by the Finance Director. No presumption of award shall be made by the bidder until such documents are in hand. Verbal notification of award is not considered official. Any action by the bidder to assume otherwise is done so at his/her own risk and the City will not be held liable for any expense incurred by a bidder that has not received an official award.

3. Cancellation of Award

The Owner reserves the right to cancel the award of any contract at any time before the execution of such contract by all parties without any liability to the Owner.

4. Return of Proposal Guaranty

All proposal guaranties, except those of the three lowest bidders, will be returned upon request following the opening and checking of the proposals. The proposal guaranties of the three lowest bidders will be returned within 10 days following the award of the contract, if requested, or if no award is made.

5. Contract Bond

At the time of the execution of the contract, the successful bidder shall furnish:

- Payment and Performance bond in the sum equal to 100 percent of the contract amount.

Each bond shall be: (1) in a form satisfactory to the Owner; (2) with a surety company licensed and authorized to do business and with a resident agent designated for services of process in the State of New Hampshire; and (3) conditioned upon the faithful performance by the principal of the agreements contained in the original bid. All premiums for the contract bonds are to be paid by the contractor.

6. Execution and Approval of Contract

The successful bidder is required to present all contract bonds, to provide proof of insurance, and to execute the contract within 10 days following receipt of the City's notification of acceptance of the bid. No contract shall be considered as in effect until it has been fully executed by all parties.

7. Failure to Execute Contract

Failure to execute the contract and file an acceptable bond within 10 days after notification of acceptance of bid shall be just cause for the cancellation of the award and the forfeiture of the proposal guarantee which shall become the property of the Owner, not as a penalty, but in liquidation of damages sustained. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised as the Owner may determine in its sole discretion.

4.0 BID PROPOSAL FORM

Proposal of_____(hereinafter called "Bidder"), organized and existing under the laws of the State of _____ doing business as_____.

(Corporation, Partnership, Individual)

To City of Portsmouth

(hereinafter called "Owner").

In compliance with your Advertisement for Bids, Bidder hereby proposes to perform all Work for the REMEDIAL IMPLEMENTATION at Osprey Landing Water Tank Site in Portsmouth, New Hampshire in strict accordance with the Contract Documents, within the time set forth therein, and at the prices stated below.

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to the Bid with any other Bidder or with any competitor.

Bidder acknowledges receipt of the following Addendum:

_____

_____

_____

The Bidder declares as follows:

1. The only parties interested in the Bid as Principals are named herein;
2. This bid is made without collusion with any person, firm, or corporation;
3. No officer, agent, or employee of the Owner or Engineer is directly or indirectly interested in this Bid;
4. He understands the difficulties attendant upon execution of the Work, and the accuracy of all estimated quantities stated in this Bid, and he has carefully examined the proposed Agreement, the Plans and Specifications and other Contract Documents therein referred to and knows and understands the terms and provisions thereof;

5. He understands that the quantities of Work tabulated in this Bid or indicated in the Specifications are only approximate and are subject to increase or decrease as deemed necessary by the Engineer.

The undersigned further understands and agrees that he is to furnish and provide for the respective item price Bid all the necessary material, machinery, implements, tools, labor, services, and other items of whatever nature, and to do and perform all the work necessary under the aforesaid conditions, to complete the above-mentioned Work in accordance with the Contract Documents and Specifications.

Instructions for Completion of the Bid

1. The Bidder must bid on each item.

2. The Bid shall include all applicable taxes and fees.

3. The Bid must be completed in ink or typewritten.

4. The Bidder must multiply the unit price by the estimated quantity to obtain the Item Total.

5. In the event that the item total does not equal the unit price multiplied by the estimated quantity, the unit price bid shall be used to correct the item total. The corrected item total shall then be used to determine the Total Bid Price.

BID (CONTINUED)

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	ITEM TOTAL
1.	Mobilization/Demobilization	Lump Sum	1	$	
2.	Contaminated Soil Excavation	Ton	585	$	
3.	Backfilling and Compaction – Common Fill	Ton	319	$	
4.	Backfilling and Seed – Loam (NHDOT 641.2.1)	Ton	266	$	
5.	Contaminated Soil Off-Site Transportation and Disposal (Non-Hazardous)	Ton	161	$	
6.	Contaminated Soil Off-Site Transportation and Disposal (Hazardous)	Ton	424	$	
7.	Surficial Detritus Removal and Disposal (assumed 3-inch thickness, 4,000 SF)	Lump Sum	1	$	
8.	Bark Chip Placement (2-inch minimum thickness, 4,000 SF)	Lump Sum	1	$	
9.	On-Site Security, Cleaning and Decontamination and Dust Control	Lump Sum	1	$	
10.	Erosion and Sedimentation Control	Lump Sum	1	$	
11.	Traffic Control – Signs, Barriers, Devices	Lump Sum	1	$	

TOTAL BID PRICE $_____
(In numerals)

Dollars _____
(In words)

Bid forms shall be completed in ink or typed. In the case of a conflict between the unit price and the total amount for the item, the unit price will take precedence. In case of conflict between the Total Bid Price in numerals and written words, the written words take precedence.

BID (CONTINUED)

The Bidder hereby agrees that he will not withdraw his Bid within 60 consecutive calendar days after the actual date of the Opening of Bids and that, if the Owner accepts his Bid, the Bidder will duly execute and acknowledge the Contract, and furnish, duly executed and acknowledged, the required Payment and Performance Bonds within ten (10) days (Sundays and Holidays excluded) after the Notice of Intent to Award.

Should the Bidder fail to fulfill any of his agreements as hereinabove set forth, the Owner shall have the right to retain as liquidated damages the amount of the bid security which shall become the Owner's property.

The Bidder, by submittal of this Bid, agrees with the Owner that the amount of the Bid security deposited with this Bid fairly and reasonably represents the amount of damages the Owner will suffer due to failure of the Bidder to fulfill his agreements as above provided.

Respectfully Submitted:

_____	_____
Signature	Address
_____	_____
Title	Date

Being duly sworn, deposes and says that he is

of _____
(Name of Organization)

and that the answers to the foregoing questions and all statements contained therein are true and correct.

Sworn to before me this _____ day of _____, 20_____

_____
Notary Public

My commission expires _____
(Seal – If Bid is by Corporation)

ATTEST _____

5.0 BID SECURITY BOND

(This format provided for convenience, actual Bid Bond is acceptable in lieu of, if compatible.)

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned

_____, as Principal, and

_____, as Surety, are hereby

held and firmly bound unto _____

IN THE SUM OF _____

as liquidated damages for payment of which, well and truly to be made we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of this obligation is such that whereas the Principal has submitted to the

_____

A CERTAIN Bid attached hereto and hereby made a part hereof to enter into a contract in writing, hereinafter referred to as the "AGREEMENT" and or "CONTRACT", for

_____
_____
_____

NOW THEREFORE,

(a) If said Bid shall be rejected or withdrawn as provided in the INFORMATION FOR BIDDERS attached hereto or, in the alternative,

(b) If said Bid shall be accepted and the Principal shall duly execute and deliver the form of AGREEMENT attached hereto and shall furnish the specified bonds for the faithful performance of the AGREEMENT and/or CONTRACT and for the payment for labor and materials furnished for the performance of the AGREEMENT and or CONTRACT,

then this obligation shall be void, otherwise it shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder in no event shall exceed the amount of this obligation.

BID SECURITY BOND (continued)

The Surety, for value received, hereby agrees that the obligation of said surety and its bond shall be in no way impaired or affected by any extensions of the time within such BID may be accepted and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the parties hereto have duly executed

this bond on the _____ day of _____, 20__.

_____L.S.
(Name of Principal)

(SEAL)

BY _____

_____
(Name of Surety)

BY _____

6.0 CONTRACT AGREEMENT

OSPREY LANDING WATER TANK REMEDIAL IMPLEMENTATION WORK

THIS AGREEMENT made as of the _____ in the year **20__,** by and between the City of Portsmouth, New Hampshire (hereinafter call the Owner) and _____. (hereinafter called the Contractor),

WITNESSETH; that the Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE I - Work - The Contractor shall perform all work as specified or indicated in the Contract Documents and Specifications in accord with the Remedial Action Plan for the Osprey Landing Water Tank site. The Contractor shall provide, at his expense, all labor, materials, equipment and incidentals as may be necessary for the expeditious and proper execution of the Project.

ARTICLE II - ENGINEER - The Director of Public Works or his authorized representative will act as City Engineer in connection with completion of the Project in accordance with the Contract Documents and Specifications.

ARTICLE III - CONTRACT TIME - The work shall commence in accordance with the Notice to Proceed. All Work shall be completed within 50 days from the Notice to Proceed, in the Spring of 2018, unless otherwise specified by the Owner.

ARTICLE IV - CONTRACT PRICE - Owner shall pay Contractor for performance of the work in accordance with the Contract Documents and Specifications as shown under item prices in the bid proposal form.

ARTICLE V –PAYMENT, SUBSTANTIAL COMPLETION, and FINAL COMPLETION - Payment, will be made only at Substantial Completion and Final Completion. Contractor shall submit an application for payment on a form approved by the Engineer at Substantial Completion.

“Substantial Completion” and “Final Completion” are at the discretion of the Engineer and are further defined in the Remedial Implementation Work Specifications and as follows: “Substantial Completion” shall be at that point, as determined by the Engineer, at which all work items are complete and major deficiencies arising out of the work have been corrected, with the exception of the establishment of vegetation, the removal of all erosion control measures, and other minor items to be completed or corrected.

Upon written notice from the Contractor that the work is substantially complete, the Engineer shall promptly make an inspection of the Work. If he finds the work is complete and complies with the terms of the contract for substantial completion, he shall provide written notification of Substantial Completion and acceptance of the work and shall provide a punch list of all items to be completed or corrected.

“Final Completion” is the full establishment of vegetation and the removal of all erosion control measures in accordance with the specifications, the completion and/or correction by the Contractor of all items listed at Substantial Completion and all non-compliant work items that arise and are identified by the Engineer during the one-year warranty period. Upon determination of Final Completion and acceptance of the work by the Engineer, submittal of all required documents by the Contractor, and settlement of all claims, the Owner shall pay the Contractor the balance of the Contract Price, subject to additions and deductions provided for in the Contract Documents. Payment will be “lump sum”.

ARTICLE VI – RETAINAGE –The Owner shall retain five (5) percent of the amount due at Substantial Completion for a one-year warranty period following substantial completion to ensure proper re-vegetation of areas disturbed during the work, maintenance of erosion control during the grow-in period, as well as the appropriate corrective actions by the Contractor during this period. Additional retainage shall be withheld from payment at substantial completion based on the Engineer's estimate of the fair value for the cost of completing or correcting each item of work identified by the Engineer. If deficiencies are not satisfactorily corrected, then the Owner shall not be required to release retainage commensurate with the deficiency(ies), at the discretion of the Engineer. Partial payments shall not constitute waivers of claims.

ARTICLE VII - LIQUIDATED DAMAGES - In event the Contractor fails to successfully execute the work within the specified contract time the Owner shall assess the Contractor liquidated damages in the amount of **five hundred dollars ($500)** for each calendar day beyond the specified completion date for each section of work. Liquidated damages shall be deducted from the Contract Price prior to final payment of the Contractor.

ARTICLE VIII - CONTRACT DOCUMENTS – The Contract Documents which comprise the contract between Owner and Contractor are attached hereto and made a part hereof and consist of the following:

A) This Agreement
B) Contractor's Bid and Bonds
C) Notice of Award, Notice to Proceed
D) Instruction to Bidders
E) Specifications
F) Any modifications, including change orders, duly delivered after execution of this Agreement.

ARTICLE IX - TERMINATION FOR DEFAULT – Should contractor at any time refuse, neglect, or otherwise fail to supply a sufficient number or amount of properly skilled workers, materials, or equipment, or fail in any respect to prosecute the work with promptness and diligence, or fail to perform any of its obligations set forth in the Contract, Owner may, at its election, terminate the employment of Contractor, giving notice to Contractor in writing of such election, and enter on the premises and take possession, for the purpose of completing the work included under this Agreement, of all the materials, tools and appliances belonging to Contractor, and to employ any other persons to finish the work and to provide the materials therefore at the expense of the Contractor.

ARTICLE X - INDEMNIFICATION OF OWNER – Contractor shall defend, indemnify and hold harmless Owner and its officials and employees from and against all suits, claims, judgments, awards, losses, costs or expenses (including without limitation attorneys' fees) to the extent arising out of or relating to Contractor's alleged negligence or breach of its obligations or warranties under this Contract. Contractor shall defend all such actions with counsel satisfactory to Owner at its own expense, including attorney's fees, and will satisfy any judgment rendered against Owner in such action.

ARTICLE XI - PERMITS – The Contractor shall secure at its own expense, all permits and consents required by law as necessary to perform the work and shall give all notices and pay all fees and otherwise comply with all applicable City, State, and Federal laws, ordinances, rules and regulations.

ARTICLE XII - INSURANCE – The Contractor shall secure and maintain, until acceptance of the work, insurance with limits not less than those specified in the Contract as indicated below.

Insurance shall be in such form as will protect the Contractor from all claims and liabilities for damages for bodily injury, including accidental death, and for property damage, which may arise from operations

under this contract whether such operation by himself or by anyone directly or indirectly employed by him.

A) Commercial General Liability: occurrence form to include contractual liability, explosion, collapse and underground storage - $1,000,000 per occurrence bodily injury and property damage; $2,000,000; general aggregate; $2,000,000 products/completed operations aggregate.

Or

Comprehensive General Liability Form: to include Premises/Operations, Independent Contractors, Products/completed operations, Personal Injury, Contractual Liability, Collapse and underground, medical payment coverages (broad form comprehensive GL Endorsement) - $1,000,000 combined Single Limit of Liability for Bodily Enjoy and Property Damage.

B) Comprehensive Automobile Liability covering all motor vehicles including owned, hired, borrowed and noon-owned vehicles - $1,000,000 combined single limit for bodily injury or property damage.

C) Commercial Umbrella Liability - $1,000,000 each occurrence/aggregate.

D) Workers Comprehensive Insurance coverage for all people employed by the Contractor to perform work on this project. This insurance shall at a minimum meet the requirements of the most current laws of the State of New Hampshire.

E) Contractors Pollution Liability Coverage of at least $1,000,000.

The City of Portsmouth, Spinnaker Point Condominiums, and Inishmaan Associates Limited Partnership shall be named as an additional insured on all liability policies and identified as a certificate holder on all policies.

Contractor shall provide proof of insurance coverage satisfactory to the City of Portsmouth.

Coverages shall remain in effect for a period consistent with the Statues of Limitations under the Law of the State of New Hampshire.

ARTICLE XIII - MISCELLANEOUS –

A) Neither Owner nor Contractor shall, without the prior written consent of the other, assign, sublet or delegate, in whole or in part, any of its rights or obligations under any of the Contract Documents; and, specifically not assign any monies due, or to become due, without the prior written consent of Owner.

B) Owner and Contractor each binds himself, his partners, successors, assigns and legal representatives, to the other party hereto in respect to all covenants, agreements and obligations contained in the Contract Documents.

C) The Contract Documents constitute the entire Agreement between Owner and Contractor and may only be altered amended or repealed by a duly executed written instrument.

D) The laws of the State of New Hampshire shall govern this Contract without reference to the conflict of law principles thereof.

E) Venue for any dispute shall be the Rockingham County Superior Court unless the parties otherwise agree.

IN WITNESS WHEREOF, the parties hereunto executed this

AGREEMENT the day and year first above written.

BIDDER:

BY:_____

TITLE:_____

CITY OF PORTSMOUTH, NH

BY:_____
John P. Bohenko

TITLE: City Manager

7.0 NOTICE OF INTENT TO AWARD

DATE: _____

TO: _____

IN AS MUCH as you are the apparent successful bidder for work entitled:

OSPREY LANDING WATER TANK REMEDIAL IMPLEMENTATION WORK

You are hereby notified that the City intends to award the aforesaid project to you.

Immediately take the necessary steps to execute the Contract and to provide required bonds and proof of insurance within ten (10) calendar days from the date of this Notice.

The City reserves the right to revoke this Notice if you fail to take the necessary steps to execute this Contract.

City of Portsmouth
Portsmouth, New Hampshire

_____
Judie Belanger,
Finance Director

8.0 NOTICE TO PROCEED

DATE: _____

TO:_____

OSPREY LANDING WATER TANK REMEDIAL IMPLEMENTATION WORK

TO:_____

YOU ARE HEREBY NOTIFIED TO COMMENCE WORK IN ACCORDANCE

WITH THE AGREEMENT DATED,

ALL WORK SHALL BE COMPLETED PRIOR TO _____.

City of Portsmouth
Portsmouth, New Hampshire

_____
Brian Goetz,
Deputy Director of Public Works

ACCEPTANCE OF NOTICE

RECEIPT OF THE ABOVE NOTICE TO
PROCEED IS HEREBY ACKNOWLEDGED BY

_____

This the _____day of_____ 20__

By: _____

Title: _____

9.0 CHANGE ORDER

Change Order # Date of Issuance:
Owner: CITY OF PORTSMOUTH, NH

Contractor:

You are directed to make the following changes in the Contract Documents:

Description:

Purpose of Change Order:

Attachments: _____

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIME
Original Contract Price: $	Original Completion Date:
Contract Price prior to this Change Order: $	Contract Time prior to this Change Order:
Net Increase of this Change Order: $	Net Increase or Decrease of this Change Order:
Contract Price with all approved Change Orders: $	Contract Time with all approved Change Orders:

RECOMMENDED:

By_____
Engineer

APPROVED:	APPROVED:	APPROVED:	APPROVED:
by_____	by_____	by_____	by_____
Deputy Director of PW	City Finance	City Manager	Contractor

10.0 LABOR AND MATERIAL PAYMENT BOND

(This format provided for convenience, actual Labor and Material Bond is acceptable in lieu, if compatible)

Bond Number _____

KNOW ALL MEN BY THESE PRESENTS:

that _____

as Principal, hereinafter called Contractor, and _____ (Surety Company) a corporation organized and existing under the laws of the State of

_____ and authorized to do business in the State of New Hampshire hereinafter called Surety, are held and firmly bound unto the City of Portsmouth, NH. Oblige, hereinafter called Owner, for the use and benefit of claimants as herein below defined, in the

amount of _____ Dollars ($_____), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____ entered into a

contract with Owner for _____ in accordance with drawings and specifications prepared by the Public Works Department, 680 Peverly Hill Road, Portsmouth, NH. 03801, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that the Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract and for the hire of all equipment, tools, and all other things contracted for or used in connection therewith, then this obligation shall be void, otherwise it shall remain in full force and effect, subject however, to the following conditions:

(1) A claimant is defined as one having a direct contract with the Principal or, with a subcontractor of the Principal for labor, material, equipment, or other things used or reasonably required for use in the performance of the Contract. "Labor and material" shall include but not be limited to that part of water, gas, power, light, heat, oil and gasoline, telephone service or rental of equipment applicable to the Contract.

(2) The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such a claimant, may sue on this bond for the use of such claimant, prosecute the suit by final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any such suit or any costs or expenses of any such suit, and principal and surety shall jointly and severally indemnify, defend and hold the Owner harmless for any such suit, costs or expenses.

LABOR AND MATERIAL PAYMENT BOND (continued)

(3) No suit or action shall be commenced hereunder by any claimant:

(a) Unless Claimant, other than one having a direct contract with the Principal, shall have given notice to all the following:

The Principal, the Owner and the Surety above named, within six (6) calendar months after such claimant did or performed the last of the work or labor or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner, and Surety, at any place where an office is regularly maintained for the transaction of business or served in any manner in which legal process may be served in the State of New Hampshire save that such service need not be made by a public officer.

(b) After the expiration of one (1) year following the date on which Principal ceased all work on said contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

(c) Other than in a State court of competent jurisdiction in and for the county or other political subdivision of the State in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere. (4) The amount of this bond may be reduced by and to the extent of any payment of payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed on record against said improvement, whether or not claim for the amount of such lien by presented under and against this bond.

Signed and sealed this _____ day of _____, 20____. In the presence of:

_____ BY: _____
(Witness) (Principal) (Seal)

_____
(Surety Company)

_____ BY: _____
(Witness) (Title) (Seal)

LABOR AND MATERIAL PAYMENT BOND (continued)

Note:

If the Principal (Contractor) is a partnership, the Bond should be signed by each of the partners.

If the Principal (Contractor) is a corporation, the Bond should be signed in its correct corporate name by its duly authorized Officer or Officers.

If this bond is signed on behalf of the Surety by an attorney-in-fact, there should be attached to it a duly certified copy of his Power of Attorney showing his authority to sign such Bonds.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Agreement.

11.0 CONTRACTOR'S AFFIDAVIT

STATE OF _____:

COUNTY OF _____:

Before me, the undersigned, a _____
(Notary Public, Justice of the Peace)

in and for said County and State personally appeared, _____
(Individual, Partner, or duly authorized representative of Corporate)

who, being duly sworn, according to law deposes and says that the cost of labor, material, and equipment and outstanding claims and indebtedness of whatever nature arising out of the performance of the Contract between

CITY OF PORTSMOUTH, NEW HAMPSHIRE

and _____
(Contractor)

of _____

Dated: _____

has been paid in full for Construction of: **Osprey Landing Water Tank Remedial Implementation Work**

_____
(Individual, Partner, or
duly authorized
representative of
Corporate Contractor)

Sworn to and subscribed
before me this _____day
of _____ 20____

_____

12.0 CONTRACTOR'S RELEASE

KNOW ALL MEN BY THESE PRESENTS that _____

(Contractor) of _____, County of _____and State of _____ does hereby acknowledge

that_____(Contractor)

has on this day had, and received from the CITY OF PORTSMOUTH NEW HAMPSHIRE, final and completed payment for the Construction of:

Osprey Landing Water Tank Remedial Implementation Work

NOW THEREFORE, the said _____

(Contractor)

for myself, my heirs, executors, and administrators) (for itself, its successors and assigns) do/does by these presents remise, release, quit-claim and forever discharge the City of Portsmouth, New Hampshire, its successors and assigns, of and from all claims and demands arising from or in connection with the said Contract dated _____, and of and from all, and all manners of action and actions, cause and causes of action and actions, suits, debts, dues, duties, sum and sums of money, accounts, reckonings, bonds, bills, specifications, covenants, contracts, agreements, promises, variances, damages, judgments, extents, executions, claims and demand, whatsoever in law of equity, or otherwise, against the City of Portsmouth, New Hampshire, its successors and assigns, which (I, my heirs, executors, or administrators) (it, its successors and assigns) ever had, now have or which (I, my heirs, executors, or administrators) (it, its successors and assigns) hereafter can shall or may have, for, upon or by reason of any matter, cause, or thing whatsoever; from the beginning of record time to the date of these presents.

IN WITNESS WHEREOF,

Contractor:

_____ By:_____

print name of witness:_____ Its Duly Authorized _____

Dated: _____

13.0 REMEDIAL IMPLEMENTATION WORK SPECIFICATIONS

Project Name:	Osprey Landing Water Tank Site	Engineer:	Ransom Consulting, Inc. (the Engineer)
Project Location:	Staysail Way Portsmouth, New Hampshire	Owner:	City of Portsmouth, New Hampshire
		Specification Date:	January 29, 2017

13.1 Description of the Work

The Work of this Contract consists of completing all activities to meet the project objectives including, but not limited to: obtaining any and all permits required to complete the Work (except as otherwise noted herein), soil excavation; protection of existing utilities, structures and other facilities; segregation of soil; providing, installing and maintaining impervious covers for contaminated soil stockpiles; loading, transportation, and proper disposal of contaminated soils; backfilling and restoration of soils to existing grades; and other items detailed in these specifications necessary to complete the Work.

1. Site Description

The Site locus is depicted on Figure 1 of the Remedial Action Plan (RAP), included in Attachment B. The Site is the former location of a water supply tank. The water tank was dismantled and removed in the fall of 2016. The former tank, and a 65-foot by 60-foot area of land encompassing the footprint of the tank is owned by the City of Portsmouth (the Site). General Site features with their approximate locations are shown on RAP Figure 2, included in Attachment B. The planned soil excavation area is shown on RAP Figure 5 of Attachment B, actual limits will be refined during excavation using real-time field screening results for lead, which in places is co-located with arsenic and polynuclear aromatic hydrocarbons (PAHs). The lead and PAHs are generally inferred to components of former water tank coatings or materials associated with the former water tank maintenance.

The approximate 0.09-acre Site property is identified by the City of Portsmouth Tax Assessor's Office as Map 218 Lot 002-0999, with a street address of 26 Staysail Way. The Site is located at the top of a hill abutted by mature forest to the north and east, and residential condominium buildings and parking areas to the south and west. The Site is accessed from Staysail Way, through the Spinnaker Point Condominiums complex. The Site is currently vacant.

The remedial actions described herein extend onto portions of the abutting property identified by the City of Portsmouth Tax Assessor's Office as owned by Inishmaan Associates Limited Partnership (operated as the Spinnaker Point Condominiums complex).

Access to the water tank property was previously protected with a chain-link fence which was removed during the tank decommissioning in the fall of 2016. Following the removal of the water tank, chain-link construction fencing was installed and has been in-place to date. The ground surface surrounding the water tank parcel consists of lawn areas historically maintained by the condominium complex, and forest.

Historic documents reviewed indicate that the water tank was installed between 1941 and 1952, by the United States Air Force contemporaneous with the development of the surrounding housing development.

The City of Portsmouth took ownership of the water tank and Site parcel in 1994. The Site vicinity has historically been used for residential housing since being developed in the mid- to late-1940s.

2. Soil Conditions

Tighe & Bond conducted a preliminary investigation of soil conditions at the Site for the City following removal of the water tank. Tighe & Bond's investigation indicated that shallow Site soils had been impacted by lead, presumably from paint on the former water tank. In June 2017 Ransom conducted additional investigation activities to further characterize soil quality and to prepare a presumptive-remedy Remedial Action Plan (RAP). The RAP was augmented by a November 2017 Supplemental Subsurface Investigation (SSI) to further determine the occurrence of arsenic in Site and area soils. No clear relationship between arsenic and former water tank paint was supported by the SSI.

The shallow soils at the Site consist predominantly of very dense, grayish-brown, silty fine to medium sand and sub-rounded gravel and localized areas of fine to medium sand (imported to fill excavations after the removal or partial removal of tank footings, a vault, and piping) overlying bedrock. A bedrock outcrop was observed at the southwest end of the Site, and bedrock was observed at sampling locations as shallow as 3 to 6 inches below ground surface. Groundwater was not encountered during the soil sampling activities and is not likely present within the relatively thin overburden soils.

Subsurface investigation results indicate that elevated concentrations of lead and arsenic were found to be generally located in the near-surface soils at the base of the former water tank, extending out 80 to 100 feet predominately to the east (prevailing wind direction), with lead concentrations declining markedly below approximately 15 inches bgs at the tested locations. Elevated lead concentrations were also documented in soils in a graded/placed area of soils located northwest of the base of the former tank at the edge of a slope. These soils were noted to contain reddish-orange paint chips, whereas at the time of removal, and dating to at least the early 1990s, the tank was painted aqua blue. Aqua blue paint is known to have impacted surface and near surface soils, whereas the inferred older reddish-orange paint chips may have impacted near surface and deeper soils and be more localized to the northwestern portion of the Site. Laboratory results indicate that lead is present at concentrations that exceed the Toxicity Characteristic Leaching Procedure (TCLP) regulatory level in both the shallow soils at the base of the former tank and the soils located in the area northwest of the former tank base.

From the occurrence of elevated lead concentrations within relatively shallow Site soils, Ransom infers that the elevated lead concentrations are associated with the historical presence of lead-based paints applied to the exterior surface of the water tank. Downward migration of the lead has generally been limited, and lead Soil Remediation Standard (SRS) exceedances were generally not observed at depths greater than 15 inches.

3. Remedial Goals

Arsenic and lead were detected at concentrations exceeding their respective NH DES SRSs of 11 milligrams per kilogram (mg/kg) and 400 mg/kg. Site background concentrations for arsenic have been documented as high as 16.1 mg/kg, but in the Seacoast New Hampshire area naturally occurring arsenic concentrations have been documented into the low 20s mg/kg. The use of herbicides and pesticides are inferred and supported by analytical data and arsenic may be in part related to the historical proper use of these products.

The objective of the Work is to reduce or eliminate the potential for human exposure to metals contamination at concentrations higher than the NH DES risk based standard for lead and co-located arsenic and PAHs. Excavation and off-site disposal of impacted soils was identified as the preferred

remedial alternative. The remedial alternative was selected with preference to speed of completion and effectiveness at reducing risk.

The SRSs for lead (400 mg/kg) and PAHs, and naturally occurring background concentrations for arsenic (16 mg/kg +/-) were selected as the clean-up criteria to define the areal extent of the Contaminants of Concern (COCs) for soil to be removed and disposed off-site. Note that it is not the intent of this remedial action to chase soils likely affected by arsenical herbicides/pesticides applied as intended outside of or within the defined remediation area.

4. Scope of Work

The principal components of the Work consist of excavation, transportation, and proper disposal of impacted soils.

The proposed limits of excavation were delineated using the field screening and laboratory analytical results from Tighe & Bond's May 2016 investigation activities and Ransom's June 2017 subsurface investigation activities. The proposed soil excavation area includes approximately 16,000 ft^2, excavating to depths ranging from approximately 3 inches to 16 inches below grade (Figure 3, Attachment B). The mass of soil to be excavated and disposed off-site is estimated to be 585 tons (420 cubic yards). Approximately 424 tons (303 cubic yards) of the excavated soil contains lead at concentrations that exceeds the TCLP regulatory level of 5 milligrams per liter (mg/L) and will require management and disposal as a hazardous waste or off-site treatment in compliance with all applicable local, State, and Federal laws, ordinances, rules and regulations to meet receiving facility standards and disposal in accordance with receiving facility regulatory requirements. Due to the Site's location in a residential neighborhood, no on-Site treatment (stabilization) prior to removal will be authorized.

Specific areas and soil depth intervals of the impacted soils will be designated to be removed and transported off-site for proper disposal at a facility permitted to receive these materials, requiring management and characterization per Env-Or 611. Soils are intended to be removed from the Site and up to 400 tons of soils exceeding TCLP lead criteria and 200 tons of non-hazardous soils have been pre-characterized in accordance with Env-Or 611 by the Engineer and are intended to be live-loaded for off-site disposal, when possible. Soils generated in excess of the characterized tonnage or that may require additional laboratory analyses for receiving facility acceptance will require short term (less than two weeks) stockpiling in accordance with the requirements detailed in this specification. Long-term on-site stockpiling and management of impacted soils is not planned. Field x-ray fluorescence (XRF) screening and endpoint sampling and laboratory analyses will be conducted or subcontracted by Ransom to document achievement of the soil cleanup goals.

The Work will be conducted in an area adjacent to an asphalt-paved parking area, owned and used by the Spinnaker Point Condominiums complex. Access to the parking area will be available to the Contractor during limited work hours, defined as weekdays from 8:00 AM to 5:00 PM, not including legal holidays. Uninterrupted access to the parking area shall be provided to the residents of the condominium complex outside of the specified work hours. The City of Portsmouth will obtain a Right of Entry and Authorization to Proceed with Work agreement from Spinnaker Point Condominiums prior to starting the Work.

Following completion of the remedial soil excavation, including receipt of laboratory results verifying clean-up goals have been met for endpoint samples, and off-site disposal activities, the Site will be restored by backfilling excavation areas. The Site will be restored by backfilling excavation areas with imported clean common fill to approximately the previous Site grades, minus 4 inches, and the

installation of 4 inches of loam and seed to revegetate the construction area, to provide positive surface water drainage into and away from the excavation area.

13.2 Abbreviations and Definitions

ASTM	ASTM International
NH DES	New Hampshire Department of Environmental Services
NHDOT	New Hampshire Department of Transportation
XRF	X-Ray Fluorescence

"Contractor" means the person, firm or corporation with whom the Owner has executed the Agreement.

"Engineer" means the person, firm or corporation named as such in the Contract Documents.

"Owner" means a public or quasi-public body or authority, corporation, association, partnership, or individual for whom the work is to be performed.

13.3 Measurement and Payment

Pay items shall be paid using the units and unit prices indicated on the Bid Form. Payment shall be full compensation for all labor, materials, equipment, tools, and transportation required to complete the Work under each pay item. Payment shall be made in accordance with the general terms and conditions of the Contract Documents. After the Work is completed, the Engineer shall make final inspections, measurements, and documents review to ensure performance in accordance with the specifications and determine quantities for the various items.

Item 1 – Mobilization/Demobilization includes preparation of the site (including removal of several trees as may be necessary), obtaining permits, movement of personnel, materials (not paid under other Work items) and equipment to and from the site, preparation and implementation of the Contractor's Site Specific Health and Safety Plan (SSHASP), and submittal of an Excavation and Disposal Plan (EDP) to the Engineer at least one week prior to beginning Site Work. Both the SSHASP and the EDP are subject to review and approval by the Engineer and the Owner.

Item 2 – Contaminated Soil Excavation includes excavation of contaminated soils, segregation, stockpiling if necessary (live-loading is planned), loading of contaminated soil for disposal; and maintenance of the excavation area and any stockpiled materials. Payment will be by appropriate unit increments. Measurement of material shall be by the ton, based on the certified weight slips provided by the disposal facility(ies).

Item 3 – Backfilling and Compaction – Common Fill includes the cost of importing clean backfill soils, placement, and compaction. Payment shall be by the ton as documented on certified weight slips provided by the material supplier(s).

Item 4 – Backfilling and Seed – Loam (NHDOT 641.2.1) includes the cost of importing clean loam backfill soils and placement as specified. Compaction and compaction testing are not required for loam backfill.

Item 5 –Contaminated Soil Off-Site Transportation and Disposal (Non-Hazardous) includes the cost of transporting non-hazardous contaminated soil to an off-site facility permitted for treatment and/or disposal of lead-, arsenic- and PAH-impacted soil (or other analytes as documented in the waste characterization results), and the facility's tipping fee. Payment for loading is included. Payment for transportation and disposal shall be by the ton as documented on the receiving facility's certified weight slips.

Item 6 – Contaminated Soil Off-Site Transportation and Disposal (Hazardous) includes the cost of transporting hazardous contaminated soil to an off-site facility permitted for treatment and/or disposal of lead-impacted soil at hazardous concentrations (or other analytes as documented in the waste characterization results), and the facility's tipping fee. Payment for loading is included. Payment for transportation and disposal shall be by the ton as documented on the receiving facility's certified weight slips.

Item 7 – Surficial Detritus Removal, Separate from Soil Excavation includes the cost to remove the upper 3 inches of forest floor material (organic detritus) over an area up to approximately 4,000 square feet. This item includes the cost of transportation to a permitted off-site solid waste facility, and the facility's tipping fee. Payment for loading is included. No measurement will be made, payment will be lump sum.

Item 8 – Bark Chip Placement includes the cost of installing an approximate 2-inch thickness of bark chips following removal of the materials specified in Item 7. Includes the cost of material and delivery to the Site as well as spreading. No measurement will be made, payment will be lump sum.

Item 9 – On-Site Security, Cleaning and Decontamination and Dust Control includes the cost of on-site security systems, including fencing and barricades as necessary, decontamination systems, and dust control equipment and implementation. The Engineer will conduct perimeter dust monitoring to document the effectiveness of Contractor dust control measures during the Work for the area adjacent to the Work. Contractor is responsible for appropriate employee exposure monitoring and dust monitoring within the areas of the Work and for implementing controls consistent with the requirements of 29 CFR 1910.120 and 1926, and in compliance with all applicable local, State, and Federal laws, ordinances, rules and regulations. Disposal of wastes generated during these processes should be included in this bid item. No measurement will be made, payment will be lump sum.

Item 10 – Erosion and Sedimentation Control includes the cost of furnishing and installing erosion and sedimentation control systems. Upon completion of the work and soils stabilization, this item also includes appropriate removal and disposal or on-Site reuse of erosion and sedimentation control systems. Note that the contractor shall provide erosion and sedimentation control system maintenance until adequate vegetation is established. Any on-site reuse shall require pre-approval by the Engineer. No measurement will be made, payment will be lump sum.

Item 11 – Traffic Control – Signs, Barriers, and Devices includes traffic signs, barriers, and other traffic control devices necessary to safely direct site traffic during the performance of the work. The Contactor is responsible for coordinating police details as necessary, if required by the City or State of New Hampshire Police. No measurement will be made, payment will be lump sum.

13.4 General Conditions

1. Contract and Contract Documents

The plan(s), information for the Contractor, payment and performance bonds, Agreements, change orders, notice to proceed, specifications and addenda, hereinafter enumerated in the Agreement, shall form part

of this Contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth.

2. Job Conditions

The September 2017 RAP for the Site and the November SSI are included in Attachment B to the specifications. The attached RAP and SSI should be referenced in conjunction with these Contract Documents and Specifications to complete the Work. Prior to contracting with the Owner to conduct this work, the Contractor must review and understand the available information, and develop appropriate means and methods for executing the work of these Specifications (the Work) accordingly. The information is made available to the Contractor for information and factual data only and shall not be interpreted as a warranty of subsurface conditions. The Contractor should base his means and methods for executing the Work not only on the available information, but also on his local experience and knowledge. The Contractor is required to visit the Site as part of a mandatory pre-bid meeting to evaluate site conditions that may affect the performance of the Work.

3. Traffic Control

The Contractor shall provide a police detail for traffic control where required by state or local authorities, or as directed by the Engineer. A police detail shall consist of one or more uniformed police officers, with or without a vehicle, as deemed necessary by state or local authorities. The Contractor shall establish requirements for traffic control with the applicable state and local authorities. Officers shall be clothed in a suitable and characteristic uniform that will readily distinguish them from all other employees. Officers shall be attired with regulation caps and high visibility vests. Officers shall have police powers granted by the proper authorities and shall wear an exposed badge. The Contractor shall provide signs, traffic cones, barriers, and other devices where required to control traffic flow.

4. Responsibilities of Owner

The Owner will arrange for and provide access to Contractors for Site visits during the bidding process. On-site potable water, sanitary facilities, or electrical services will NOT be provided by the Owner during the Work. Any such temporary facilities required to complete the Work will be the responsibility of the Contractor.

5. Permits, Rules, Ordinances

All permits and licenses necessary for the prosecution of the Work shall be obtained and paid for by the Contractor. The Contractor shall comply with all applicable laws, rules, regulations, codes, and ordinances, and obtain all applicable permits prior to the start of Work. Premark the site and obtain Dig Safe clearance prior to the start of Work. Obtain local and NH DOT bonding, and street opening permits where required. Permits may include:

- City of Portsmouth Excavation Permit.
- City of Portsmouth Flagging Permit.
- Other permits, as required by Federal, State and Local laws and ordinances.

The Contractor shall comply with the requirements of the applicable rules and regulations, including, but not limited to State of New Hampshire Code of Administrative Rules Env-Or 600 Contaminated Site Management.

6. Health and Safety Responsibilities

The Contractor shall be trained, and field personnel shall be trained in hazardous waste operations and emergency response in accordance with Occupational Safety and Health Administration (OSHA) requirements. The Contractor shall at all times be responsible for exercising reasonable precaution for the health and safety of his employees, subcontractors and vendors engaged in the execution and control of the Work required in these Project Descriptions. The Contractor shall comply with all applicable provisions of federal, state and local health and safety statutes, codes and regulations, including 29 CFR Parts 1910 and 1926.

The Contractor shall prepare a project and Site Specific Health and Safety Plan, for use by all his employees, subcontractors and vendors engaged in the Work at the Site. The SSHASP shall include requirements for air quality monitoring, air quality documentation, and appropriate action levels and response measures to ensure air quality compliance for Site works zones as well as attainment of residential air quality standards at the Work perimeter. The SSHASP shall be provided to the Engineer for review and approval at least one week prior to beginning Site Work. In consideration of the recently adopted silica standard (personal exposure limit of 50 µg/m3), the requirement for no visible dust emissions is anticipated. Appropriate measures to mitigate off-Site tracking of soils shall be included in the SSHASP or EDP. The Contractor shall review the plan with all on-site employees and other personnel prior to starting the Work. Note that excavation and handling of metals contaminated soil shall be required.

7. Underground Utilities

Underground utilities may exist in or adjacent to the work areas.

The Contractor shall review the locations of underground utilities with the Engineer and Owner before beginning excavation or other intrusive activities. The Contractor shall review any available drawings indicating utility locations. The Contractor shall contact appropriate local or municipal utilities and contact Dig Safe and obtain an Authorization to Excavate number prior to beginning any intrusive work at the site.

The Contractor is responsible for any damage to utilities marked by the local or municipal utilities or Dig Safe, shown on drawings, or otherwise believed to be present based on the Contractor's field observations or discussions with the Owner and/or Engineer. Any such utilities damaged by performance of the Work shall be repaired by the Contractor at no additional cost to the Owner. The Contractor shall repair all damaged utilities to the satisfaction of the utility owner and the Engineer.

The Contractor is responsible for any damage to adjacent buildings, roadways, and parking areas as a result of the performance of the Work. Any such damage by performance of the Work shall be repaired by the Contractor, to the satisfaction of the Owner and Engineer at no additional cost to the Owner.

8. Protection of Work

The Contractor shall protect the Work from wind and water erosion including but not limited to providing temporary berms, swales, mulch, and other structures, as appropriate, to redirect surface water away from excavated areas. The Contractor shall be responsible for proper management, treatment, and disposal of any surface water (including stormwater) that enters the excavation or leaves the Work area due to surface runoff at no additional cost to the Owner.

Sedimentation barriers shall be installed at the perimeter of the Work to provide temporary control of erosion. They shall be staked with the required stakes. Upon Engineer approval of the completed Work, the sediment barriers shall be removed unless otherwise ordered by Owner. If any sediment barriers become loosened or raised, or undermined, satisfactory repairs shall be made immediately.

The Contractor shall protect above and below grade utilities and structures, which are to remain, and provide suitable support for utilities that may be affected by the Work. The Contractor shall protect landscaping, structures, paving, and other features outside of the work area, and install barriers or grade the area surrounding the excavation to prevent the flow of surface water into or out of the Work area.

The Contractor shall protect from damage all curbing and pavement outside of the limits of the Work area. The Contractor shall replace all curbing or pavement that is damaged by performance of the Work. Curbing or pavement outside of the limits of the Work area, including access roadways, that is damaged by performance of the Work shall be replaced at no additional cost to the Owner.

9. Prosecution of Work

It is understood and mutually agreed by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the Contract of the Work to be done hereunder are essential conditions of this Contract; and it is further mutually understood and agreed that the Work embraced in the Contract Documents shall be commenced within 10 days of the "Notice to Proceed" date unless otherwise specified by the Owner.

The Contractor shall pursue the Work regularly, diligently and continuously at such rate of progress as will ensure full completion thereof within the time specified in the Contract. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of the Work described is a reasonable time. The Contractor shall limit the days and hours of work to comply with local ordinances and the work hours described in Scope of Work.

10. Engineer's Estimated Quantities

The Engineer's estimated quantities are indicated on the BID form in the Contract Documents. Actual quantities may vary from those indicated. The Total Price for each item shall be based on the quantities indicated on the BID form. No adjustment, either up or down, in unit price for an individual pay item will be considered unless the actual quantity of the pay item required to complete the Work varies by greater than thirty-five percent (35%) from that indicated on the BID form.

Should any unit priced item or task contained on the BID form be found unnecessary for the proper completion of the Work, the Engineer may eliminate such item or task from the contract and such action shall in no way invalidate this Agreement. No allowance will be made for items or tasks so eliminated.

11. Extra Work and Change Orders

11.01 – The Engineer may at any time by written order and without notice to the Sureties require the performance of such extra work or changes in the Work as may be found necessary or desirable. The amount of compensation to be paid to the Contractor for any extra work so ordered shall be made in accordance with whichever of the following plans the Engineer elects and which is authorized by the Owner: (1) a price agreed upon between the parties and stipulated in the order for the extra work; (2) a price based on the unit prices of the Contract. The Contractor shall furnish supporting documentation covering all items of cost, when requested by the Owner, and shall allow the Owner access to accounts relating thereto.

11.02 – The Engineer may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a written Field Order. However, if the Contractor believes that any minor change or alteration authorized by the Engineer entitles the Contractor to an increase in the contract price, the Contractor may make a claim as provided in the Section 13. Claims for Extra Cost.

12. Claims for Differing Site Conditions

12.01 – The Contractor shall promptly and without further disturbance, notify the Engineer in writing of:

A) Subsurface or latent physical conditions at the site differing substantially from those indicated in this Contract; or

B) Unknown physical conditions at the site, differing materially from those ordinarily encountered and generally recognized as inherent in the type of work provided for in this Contract.

12.02 – The Engineer shall promptly investigate the conditions. If the Engineer finds that conditions differ materially and will cause an increase or decrease in the Contractor's cost or the time required to perform any part of the Work under this Contract, the Engineer, after obtaining approval from the Owner, shall make an equitable adjustment and modify the Contract in writing.

12.03 – No claim of the Contractor under this clause shall be allowed unless the Contractor has given proper notice as required in paragraph 12.01 of this Section.

12.04 – No claim by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this Contract.

13. Claims for Extra Cost

13.01 – No claims for extra work or cost shall be allowed unless done pursuant to a written order by the Engineer, approved by the Owner.

13.02 – If the Contractor claims that any instructions by drawings or similar documents issued after the date of the Contract involve extra cost under the Contract, the Contractor shall give the Engineer written notice after the receipt of such instruction and before proceeding to execute the work, except in an emergency which threatens life or property, then the procedure shall be as provided for under Section 11.0. No such claim shall be valid unless so made.

14. Submittals

Submit to the Engineer for Engineer and Owner review, each of which is subject to approval, the following items a minimum of one week prior to beginning Site Work (work shall not proceed until the items are approved or acknowledged by the Engineer):

1. Excavation and Disposal Plan describing means and methods of conducting the required excavations, stockpiling, loading, transportation, backfilling and restoration, including an outline of the work sequence and methodology proposed to effectively remove impacted soils with the necessary care to prevent soil quality degradation and mixing of defined areas and detailing grade control methods that will be utilized to excavate to the specified depths. Excavations shall have no standing water present that would impede the proper

placement and compaction of backfill materials. The EDP shall also identify the proposed disposal facilities for hazardous and non-hazardous metals-impacted soil, as well as surficial detritus.

2. Copies of all required permits;

3. Site Specific Health and Safety Plan;

4. Certificates of insurance indicating insurance coverage and the required payment and performance bonds in accordance with the Contract Documents;

5. Minimum 50 lb. sample of each proposed fill material, with a description of source location and proposed use of each sample; and

6. Results of laboratory soil tests provided by the supplier for grain size distribution (in accordance with ASTM D-422).

Submit to the Engineer the following, within one week of substantial completion of the Work, as attachments to a transmittal letter:

1. Copies of Bills of Lading, hazardous waste manifests, weight slips, and disposal documentation for all contaminated soil and surficial detritus removed during the work;

2. Copies of weight slips for all imported fill material delivered to the site.

15. Excavation

15.01 – General – Excavate soil within the approximate limits shown on RAP Figure 5 included in Attachment B. Actual vertical and horizontal limits of excavation may vary and will be determined by the Engineer in the field based on indications of contamination, field screening results, and other factors. The contractor will be required to excavate to tight excavation depth tolerances (approximately 3-inch increments) to complete the remedial activities, which will require a smooth-edged bucket, skilled operator, and proper grade control.

At no time should the excavation be extended to areas where it could undermine footings or utilities or affect the stability of existing structures including roadways. The Contractor shall maintain a minimum lateral distance of one foot away from footings or bottom of other structures for each foot of depth of excavation below the footing or structure, or as otherwise necessary to protect existing utilities or structures. Specified excavation sloping (1H:1V adjacent to structures) assumes that required excavation dewatering has been completed prior to soil removal. Excavate using methods that neither disturb nor damage pavement outside the final limits of the work area, unless otherwise approved by the Engineer in writing. The estimated volume of excavation is approximately 420 cubic yards (585 tons) without any adjustments for sloping. The estimated excavation extents are shown on RAP Figure 5 included in Attachment B.

In order to mitigate excessive dust during excavation activities, the Contractor shall perform standard construction wetting or other dust control practices, as necessary; however, wetting practices shall not result in a discharge to surface water. The Contractor shall suspend all grading operations when winds carry dust beyond the Work area despite implementation of all feasible dust control measures. All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions. Vehicles and storage containers

utilized for the storage and/or transport of impacted soils shall be structurally sound and tight to prevent leakage or spillage of materials. All excavated material leaving the Site shall be completely covered to prevent fugitive dust emissions.

Equipment used in the Work area (including but not limited to hand tools, heavy machinery, and vehicles) must be properly cleaned prior to leaving the Work area. Remove all soil and other materials from the wheels and exterior surfaces of all vehicles leaving the Work area. Contractor is responsible for any and all actions necessary to remedy situations involving material spilled or leaked in transit, or mud or soil tracked off-site. If material is spilled or leaked in transit, immediately notify the Engineer, who will notify Owner. Perform cleanup with suitable equipment provided by the Contractor in accordance with federal, state, and local regulations at no additional cost to Owner.

15.02 – Protection of Existing Facilities - Protect the buildings, landscaping structures, and paving outside of the excavation footprint, and other features outside of the limits of the Work. Install barriers or grade the area surrounding the excavation to prevent the flow of surface water into the excavation. In conformance with standard industry practice and compliance with applicable regulations, provide fences, barriers, barricades or any other means necessary to protect the public, vehicle traffic, facility workers or unauthorized individuals from entering the work area or open excavations.

16. Contaminated Soil and Water Handling

16.01 – Soil Segregation – Soils containing metals at hazardous concentrations will be managed and disposed separately from soils containing lesser levels of metals impacts, and otherwise unimpacted soils. The areas of soils containing metals at hazardous concentrations are depicted on RAP Figure 5 of Attachment B. Field screening of excavated soil will be performed by the Engineer. Soil will be assessed for indications of metals impacts based on visual and field XRF screening performed by the Engineer. The Engineer will classify soils to facilitate Contractor management of soils. Contractor will prosecute the work in a manner to allow for real-time soil sampling and screening by the Engineer which, along with laboratory data, will direct the spatial limits of soil removal.

The Contractor shall segregate excavated soils based the available information and the Engineer's classification based on field screening. For contaminated stockpiles that are to be left overnight or longer, construct stockpiles on a double layer of 6-mil polyethylene sheeting. Cover the stockpiles with a single layer of 6-mil polyethylene sheet at the end of each workday. Secure sheet to prevent disturbance by wind. The Contractor shall maintain the stockpiles and replace the cover, if damaged. Stockpiles of soils excavated from the area with TCLP lead exceedances shall be staged only within the footprint area of the TCLP lead exceedance area.

16.02 – Soil Testing – The Engineer has obtained waste characterization soil samples for disposal characterization in accordance with Env-Or 600 *Contaminated Site Management*; which are appended to this Specification. Should the actual tonnage excavated for disposal require additional characterization samples, the Engineer will provide the Contractor with copies of the laboratory report(s) for those additional samples. The Engineer will collect endpoint soil samples from the bottom and sidewalls, as warranted, of the excavations for confirmatory laboratory analysis. The Contractor shall assist the Engineer by collecting samples using the excavator, if so required, at no additional charge. The excavation shall not be backfilled prior to receipt of acceptable confirmatory sample results from the laboratory. Results of the analyses will be made available by the Engineer within 48 hours of analyses.

16.03 – Disposal of Contaminated Soils – The Contractor shall dispose of contaminated soil at an approved off-site facility. The Contractor shall contract with the disposal facility for transportation and disposal of the soil and shall provide generator waste profile documentation for review and approval by

the Engineer and Owner. Soil shall be transported in accordance with NHDOT requirements and any additional applicable state DOT requirements dependent on the selected disposal facility location. Stockpiling of soils on-site should be minimized, and live-loading should be conducted whenever possible. All contaminated stockpiles shall be removed from the site and transported to an approved disposal facility no later than 3 days following excavation, unless otherwise approved by the Engineer. The Contractor shall protect excavated soil to prevent infiltration of water into, and erosion of soil from the stockpiles. The Contractor shall be responsible for any additional disposal costs incurred due to excess weight, or other fees, caused by increase in soil moisture content after the soil is excavated.

16.04 – Water Management No groundwater is anticipated for this project. The Contractor is responsible for runoff management. Proper management, collection, and disposal of waste water is the sole responsibility of the Contractor, including runoff that accumulates in the excavation and requires removal for proper implementation of the Work, at no additional cost to the Owner.

17. Backfilling

17.01 – General – The Contractor shall not backfill excavations until the limits of excavation are approved by the Engineer. This does not preclude sequentially excavating a particular section or depth interval of the excavation, provided the Engineer has approved the conceptual approach prior to placing any backfill, and contingent on endpoint (wall and/or base) sampling completed to the satisfaction of the Engineer.

All fill materials shall consist of mineral soil, free of trash, snow, ice, construction debris or other detrimental materials. All imported backfill materials must be virgin common fill approved by the Engineer prior to delivery to the site. Maximum particle size of any backfill material shall not exceed two-thirds of the loose thickness of the lift being placed. All granular fills should be placed in 12-inch maximum loose lifts. Excavator bucket compaction methods are considered suitable for backfilling and compacting the excavation areas. Excavation areas shall be backfilled with imported fill materials meeting the project specifications gradation requirements to approximately the previous Site grades to provide positive surface water drainage and allow installation of a minimum 4 inches of loam and seed to revegetate the work area. Areas excavated to depths less than 4 inches require only replacement of those soils with an equivalent thickness of loam.

17.02 – Materials

Common Fill - Common fill imported to the Site shall have a maximum particle size of 3 inches and meet the gradation specifications for NHDOT 304.2 “Gravel”. Common fill shall be used as backfill up to a depth of 4 inches below the proposed finished grade. Loam may be substituted for common fill as backfill.

Loam - Loam imported to the Site shall consist of loose friable topsoil with no admixture of refuse or material toxic to plant growth meeting the material requirements of NHDOT 641. Loam shall be generally free from stones, lumps, stumps, or similar objects larger than 2 inches in greatest diameter, subsoil, roots, and weeds. Loam shall be spread to approximately the previous Site grades to provide positive surface water drainage.

17.03 – Replacement of Non-Conforming Off-site Borrow – Off-site borrow materials not meeting the requirements of these Specifications shall be removed, disposed of and replaced with conforming materials by the Contractor at no additional cost.

18. Loam and Seed

Restore all areas disturbed by the Work with loam and seed (minimum 4-inch thickness). Loam shall consist of imported soil meeting the specification provided in Section 17.02. Loam shall be spread to approximately the previous Site grades to provide positive surface water drainage. Areas excavated to depths less than 4 inches require only replacement of those soils with an equivalent thickness of loam.

Prepare the seed bed in accordance with NHDOT 644. Hay mulch, Rolled Erosion Control Products (RECP), or other material shall be applied as necessary to provide soil stabilization and/or erosion control on slopes. Seed, fertilizer, lime, and a suitable wood fiber mulch shall be applied using hydraulic methods ("hydroseeding") in accordance with NHDOT 644. The Contractor is responsible for maintaining soil stabilization and erosion controls until the disturbed areas are stabilized by vegetation growth. Apply starter type fertilizer at the rate recommended by the manufacturer. Apply Park Seed Type 15 seed in accordance with NHDOT 644. Apply hay mulch in accordance with NHDOT 645. The Contractor shall be responsible for care and watering as necessary to produce a satisfactory growth. To be acceptable, a stand of grass shall show a reasonably thick, uniform stand, free from sizable areas of thin bare spots, with a uniform count of at least 100 plants of specified grass per square foot. Any part of seeded areas which fail to yield an acceptable stand shall be reseeded at no cost to the Owner. If the Work extends beyond the current year's growing season, the Contractor will be responsible for restoring all disturbed areas in the spring of the following year until acceptable growth is achieved at no cost to the Owner.

19. Site Restoration

The Contractor shall restore objects or Site features damaged by the work to a condition equivalent to pre-construction conditions. Replace or restore other miscellaneous salvaged or damaged objects or Site features, such as signs, planters, lighting, etc. that were disturbed because of the Work.

20. Temporary Facilities

20.01 – Storage Facilities

(a) The Contractor shall not store materials or equipment in a public right-of-way beyond the needs of one working day. Equipment and materials shall be stored in a located approved by the Engineer.

(b) The Contractor shall protect all stored materials from damage by weather or accident and shall insure adequate drainage at and about the storage location.

(c) Prior to final acceptance of the work all temporary storage facilities and surplus stored materials shall be removed from the Site.

20.02 – Sanitary Facilities

(a) The Contractor shall provide for toilet facilities for the use of the workers employed on the work.

(b) Temporary toilet facilities may be installed provided that the installation and maintenance conform with all State and local laws, codes, regulations and ordinances governing such work. They shall be properly lit and ventilated and shall be kept clean at all times.

(c) Prior to final acceptance of the work all temporary toilet facilities shall be removed from the site.

20.03 – Temporary Water

The Contractor shall make all arrangements with the local water department for obtaining water connections to provide the water necessary for construction operations and shall pay all costs.

20.04 – Temporary Electricity

The Contractor shall make all arrangements with the electrical utility service for obtaining electrical connections to provide the electrical power necessary for construction operations and security lighting and shall pay all electrical connection and power costs.

The Contractor shall be responsible with obtaining an electrical permit from the City Electrical Inspector as necessary.

ATTACHMENT A

Waste Characterization Results

Remedial Implementation Work Contract Documents and Specifications
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

ANALYTICAL REPORT

Lab Number:	L1726925
Client:	Ransom Consulting, Inc. 112 Corporate Drive Pease International Tradeport Portsmouth, NH 03801
ATTN:	Jay Johonnett
Phone:	(603) 436-1490
Project Name:	OSPREY LANDING
Project Number:	171.05010
Report Date:	08/10/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726925-01	WC1	SOIL	PORTSMOUTH, NH	08/03/17 09:30	08/03/17
L1726925-02	WC2	SOIL	PORTSMOUTH, NH	08/03/17 09:40	08/03/17
L1726925-03	WC3	SOIL	PORTSMOUTH, NH	08/03/17 09:50	08/03/17
L1726925-04	WC4	SOIL	PORTSMOUTH, NH	08/03/17 10:00	08/03/17

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Case Narrative (continued)

Sample Receipt

At the client's request, TCLP Lead was added to sample L1726925 "WC2".

Semivolatile Organics

The WG1029375-2/-3 LCS/LCSD recoveries, associated with L1726925-01 through -04, are below the acceptance criteria for benzoic acid (0%/0%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

Herbicides

The WG1029358-3 LCSD recoveries, associated with L1726925-01 through -04, are below the acceptance criteria for dinoseb (9%); however, the recoveries are due to a noted method interference caused by the hydrolysis step of the extraction procedure. The results of the associated samples are reported; however, all results are considered to have a potentially low bias for this compound.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kara Lindquist

Title: Technical Director/Representative Date: 08/10/17

ORGANICS

VOLATILES

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/17 00:05
Analyst: MV
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	13	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	1.9	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	4.4	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	1.3	--	1
Chlorobenzene	ND		ug/kg	1.3	--	1
Trichlorofluoromethane	ND		ug/kg	6.3	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.3	--	1
Bromodichloromethane	ND		ug/kg	1.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.3	--	1
1,1-Dichloropropene	ND		ug/kg	6.3	--	1
Bromoform	ND		ug/kg	5.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Benzene	ND		ug/kg	1.3	--	1
Toluene	ND		ug/kg	1.9	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	6.3	--	1
Bromomethane	ND		ug/kg	2.5	--	1
Vinyl chloride	ND		ug/kg	2.5	--	1
Chloroethane	ND		ug/kg	2.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
Trichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	6.3	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 Date Collected: 08/03/17 09:30

Client ID: WC1 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	6.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	6.3	--	1
Methyl tert butyl ether	ND		ug/kg	2.5	--	1
p/m-Xylene	ND		ug/kg	2.5	--	1
o-Xylene	ND		ug/kg	2.5	--	1
Xylenes, Total	ND		ug/kg	2.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	13	--	1
1,2,3-Trichloropropane	ND		ug/kg	13	--	1
Styrene	ND		ug/kg	2.5	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	46	--	1
Carbon disulfide	ND		ug/kg	13	--	1
2-Butanone	ND		ug/kg	13	--	1
4-Methyl-2-pentanone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	6.3	--	1
Tetrahydrofuran	ND		ug/kg	25	--	1
2,2-Dichloropropane	ND		ug/kg	6.3	--	1
1,2-Dibromoethane	ND		ug/kg	5.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Bromobenzene	ND		ug/kg	6.3	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	6.3	--	1
1,3,5-Trichlorobenzene	ND		ug/kg	5.1	--	1
o-Chlorotoluene	ND		ug/kg	6.3	--	1
p-Chlorotoluene	ND		ug/kg	6.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.3	--	1
Hexachlorobutadiene	ND		ug/kg	6.3	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	6.3	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	6.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	6.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	6.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	6.3	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Ethyl ether	ND		ug/kg	6.3	--	1
Isopropyl Ether	ND		ug/kg	5.1	--	1
Tert-Butyl Alcohol	ND		ug/kg	130	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.1	--	1
1,4-Dioxane	ND		ug/kg	51	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	111		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/17 00:32
Analyst: MV
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	7.4	--	1
1,1-Dichloroethane	ND		ug/kg	1.1	--	1
Chloroform	ND		ug/kg	1.1	--	1
Carbon tetrachloride	ND		ug/kg	0.74	--	1
1,2-Dichloropropane	ND		ug/kg	2.6	--	1
Dibromochloromethane	ND		ug/kg	0.74	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	--	1
Tetrachloroethene	ND		ug/kg	0.74	--	1
Chlorobenzene	ND		ug/kg	0.74	--	1
Trichlorofluoromethane	ND		ug/kg	3.7	--	1
1,2-Dichloroethane	ND		ug/kg	0.74	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.74	--	1
Bromodichloromethane	ND		ug/kg	0.74	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.74	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.74	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.74	--	1
1,1-Dichloropropene	ND		ug/kg	3.7	--	1
Bromoform	ND		ug/kg	3.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.74	--	1
Benzene	ND		ug/kg	0.74	--	1
Toluene	ND		ug/kg	1.1	--	1
Ethylbenzene	ND		ug/kg	0.74	--	1
Chloromethane	ND		ug/kg	3.7	--	1
Bromomethane	ND		ug/kg	1.5	--	1
Vinyl chloride	ND		ug/kg	1.5	--	1
Chloroethane	ND		ug/kg	1.5	--	1
1,1-Dichloroethene	ND		ug/kg	0.74	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
Trichloroethene	ND		ug/kg	0.74	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.7	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02 Date Collected: 08/03/17 09:40

Client ID: WC2 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.7	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.7	--	1
Methyl tert butyl ether	ND		ug/kg	1.5	--	1
p/m-Xylene	ND		ug/kg	1.5	--	1
o-Xylene	ND		ug/kg	1.5	--	1
Xylenes, Total	ND		ug/kg	1.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.74	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.74	--	1
Dibromomethane	ND		ug/kg	7.4	--	1
1,2,3-Trichloropropane	ND		ug/kg	7.4	--	1
Styrene	ND		ug/kg	1.5	--	1
Dichlorodifluoromethane	ND		ug/kg	7.4	--	1
Acetone	ND		ug/kg	27	--	1
Carbon disulfide	ND		ug/kg	7.4	--	1
2-Butanone	ND		ug/kg	7.4	--	1
4-Methyl-2-pentanone	ND		ug/kg	7.4	--	1
2-Hexanone	ND		ug/kg	7.4	--	1
Bromochloromethane	ND		ug/kg	3.7	--	1
Tetrahydrofuran	ND		ug/kg	15	--	1
2,2-Dichloropropane	ND		ug/kg	3.7	--	1
1,2-Dibromoethane	ND		ug/kg	3.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.74	--	1
Bromobenzene	ND		ug/kg	3.7	--	1
n-Butylbenzene	ND		ug/kg	0.74	--	1
sec-Butylbenzene	ND		ug/kg	0.74	--	1
tert-Butylbenzene	ND		ug/kg	3.7	--	1
1,3,5-Trichlorobenzene	ND		ug/kg	3.0	--	1
o-Chlorotoluene	ND		ug/kg	3.7	--	1
p-Chlorotoluene	ND		ug/kg	3.7	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.7	--	1
Hexachlorobutadiene	ND		ug/kg	3.7	--	1
Isopropylbenzene	ND		ug/kg	0.74	--	1
p-Isopropyltoluene	0.79		ug/kg	0.74	--	1
Naphthalene	ND		ug/kg	3.7	--	1
n-Propylbenzene	ND		ug/kg	0.74	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.7	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.7	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.7	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.7	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Ethyl ether	ND		ug/kg	3.7	--	1
Isopropyl Ether	ND		ug/kg	3.0	--	1
Tert-Butyl Alcohol	ND		ug/kg	74	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.0	--	1
1,4-Dioxane	ND		ug/kg	30	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	110		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/17 00:58
Analyst: MV
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	6.6	--	1
1,1-Dichloroethane	ND		ug/kg	0.99	--	1
Chloroform	ND		ug/kg	0.99	--	1
Carbon tetrachloride	ND		ug/kg	0.66	--	1
1,2-Dichloropropane	ND		ug/kg	2.3	--	1
Dibromochloromethane	ND		ug/kg	0.66	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.99	--	1
Tetrachloroethene	ND		ug/kg	0.66	--	1
Chlorobenzene	ND		ug/kg	0.66	--	1
Trichlorofluoromethane	ND		ug/kg	3.3	--	1
1,2-Dichloroethane	ND		ug/kg	0.66	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.66	--	1
Bromodichloromethane	ND		ug/kg	0.66	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.66	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.66	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.66	--	1
1,1-Dichloropropene	ND		ug/kg	3.3	--	1
Bromoform	ND		ug/kg	2.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.66	--	1
Benzene	ND		ug/kg	0.66	--	1
Toluene	ND		ug/kg	0.99	--	1
Ethylbenzene	ND		ug/kg	0.66	--	1
Chloromethane	ND		ug/kg	3.3	--	1
Bromomethane	ND		ug/kg	1.3	--	1
Vinyl chloride	ND		ug/kg	1.3	--	1
Chloroethane	ND		ug/kg	1.3	--	1
1,1-Dichloroethene	ND		ug/kg	0.66	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.99	--	1
Trichloroethene	ND		ug/kg	0.66	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.3	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03 Date Collected: 08/03/17 09:50

Client ID: WC3 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.3	--	1
Methyl tert butyl ether	ND		ug/kg	1.3	--	1
p/m-Xylene	ND		ug/kg	1.3	--	1
o-Xylene	ND		ug/kg	1.3	--	1
Xylenes, Total	ND		ug/kg	1.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.66	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.66	--	1
Dibromomethane	ND		ug/kg	6.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.6	--	1
Styrene	ND		ug/kg	1.3	--	1
Dichlorodifluoromethane	ND		ug/kg	6.6	--	1
Acetone	ND		ug/kg	24	--	1
Carbon disulfide	ND		ug/kg	6.6	--	1
2-Butanone	ND		ug/kg	6.6	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.6	--	1
2-Hexanone	ND		ug/kg	6.6	--	1
Bromochloromethane	ND		ug/kg	3.3	--	1
Tetrahydrofuran	ND		ug/kg	13	--	1
2,2-Dichloropropane	ND		ug/kg	3.3	--	1
1,2-Dibromoethane	ND		ug/kg	2.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.66	--	1
Bromobenzene	ND		ug/kg	3.3	--	1
n-Butylbenzene	ND		ug/kg	0.66	--	1
sec-Butylbenzene	ND		ug/kg	0.66	--	1
tert-Butylbenzene	ND		ug/kg	3.3	--	1
1,3,5-Trichlorobenzene	ND		ug/kg	2.6	--	1
o-Chlorotoluene	ND		ug/kg	3.3	--	1
p-Chlorotoluene	ND		ug/kg	3.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.3	--	1
Hexachlorobutadiene	ND		ug/kg	3.3	--	1
Isopropylbenzene	ND		ug/kg	0.66	--	1
p-Isopropyltoluene	ND		ug/kg	0.66	--	1
Naphthalene	ND		ug/kg	3.3	--	1
n-Propylbenzene	ND		ug/kg	0.66	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.3	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Ethyl ether	ND		ug/kg	3.3	--	1
Isopropyl Ether	ND		ug/kg	2.6	--	1
Tert-Butyl Alcohol	ND		ug/kg	66	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.6	--	1
1,4-Dioxane	ND		ug/kg	26	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	111		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/17 12:43
Analyst: CBN
Percent Solids: 98%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	6.0	--	1
1,1-Dichloroethane	ND		ug/kg	0.89	--	1
Chloroform	ND		ug/kg	0.89	--	1
Carbon tetrachloride	ND		ug/kg	0.60	--	1
1,2-Dichloropropane	ND		ug/kg	2.1	--	1
Dibromochloromethane	ND		ug/kg	0.60	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.89	--	1
Tetrachloroethene	ND		ug/kg	0.60	--	1
Chlorobenzene	ND		ug/kg	0.60	--	1
Trichlorofluoromethane	ND		ug/kg	3.0	--	1
1,2-Dichloroethane	ND		ug/kg	0.60	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.60	--	1
Bromodichloromethane	ND		ug/kg	0.60	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.60	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.60	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.60	--	1
1,1-Dichloropropene	ND		ug/kg	3.0	--	1
Bromoform	ND		ug/kg	2.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.60	--	1
Benzene	ND		ug/kg	0.60	--	1
Toluene	ND		ug/kg	0.89	--	1
Ethylbenzene	ND		ug/kg	0.60	--	1
Chloromethane	ND		ug/kg	3.0	--	1
Bromomethane	ND		ug/kg	1.2	--	1
Vinyl chloride	ND		ug/kg	1.2	--	1
Chloroethane	ND		ug/kg	1.2	--	1
1,1-Dichloroethene	ND		ug/kg	0.60	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.89	--	1
Trichloroethene	ND		ug/kg	0.60	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.0	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04 Date Collected: 08/03/17 10:00

Client ID: WC4 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.0	--	1
Methyl tert butyl ether	ND		ug/kg	1.2	--	1
p/m-Xylene	ND		ug/kg	1.2	--	1
o-Xylene	ND		ug/kg	1.2	--	1
Xylenes, Total	ND		ug/kg	1.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.60	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.60	--	1
Dibromomethane	ND		ug/kg	6.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.0	--	1
Styrene	ND		ug/kg	1.2	--	1
Dichlorodifluoromethane	ND		ug/kg	6.0	--	1
Acetone	ND		ug/kg	21	--	1
Carbon disulfide	ND		ug/kg	6.0	--	1
2-Butanone	ND		ug/kg	6.0	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.0	--	1
2-Hexanone	ND		ug/kg	6.0	--	1
Bromochloromethane	ND		ug/kg	3.0	--	1
Tetrahydrofuran	ND		ug/kg	12	--	1
2,2-Dichloropropane	ND		ug/kg	3.0	--	1
1,2-Dibromoethane	ND		ug/kg	2.4	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.60	--	1
Bromobenzene	ND		ug/kg	3.0	--	1
n-Butylbenzene	ND		ug/kg	0.60	--	1
sec-Butylbenzene	ND		ug/kg	0.60	--	1
tert-Butylbenzene	ND		ug/kg	3.0	--	1
1,3,5-Trichlorobenzene	ND		ug/kg	2.4	--	1
o-Chlorotoluene	ND		ug/kg	3.0	--	1
p-Chlorotoluene	ND		ug/kg	3.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--	1
Hexachlorobutadiene	ND		ug/kg	3.0	--	1
Isopropylbenzene	ND		ug/kg	0.60	--	1
p-Isopropyltoluene	ND		ug/kg	0.60	--	1
Naphthalene	ND		ug/kg	3.0	--	1
n-Propylbenzene	ND		ug/kg	0.60	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.0	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Ethyl ether	3.2		ug/kg	3.0	--	1
Isopropyl Ether	ND		ug/kg	2.4	--	1
Tert-Butyl Alcohol	ND		ug/kg	60	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.4	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.4	--	1
1,4-Dioxane	ND		ug/kg	24	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	104		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/09/17 23:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 01-03 Batch: WG1030739-5					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	5.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	5.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	5.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/09/17 23:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 01-03 Batch: WG1030739-5					
1,2-Dichlorobenzene	ND		ug/kg	5.0	--
1,3-Dichlorobenzene	ND		ug/kg	5.0	--
1,4-Dichlorobenzene	ND		ug/kg	5.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	10	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	5.0	--
Tetrahydrofuran	ND		ug/kg	20	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	5.0	--
1,3,5-Trichlorobenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	5.0	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/09/17 23:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 01-03 Batch: WG1030739-5					
p-Chlorotoluene	ND		ug/kg	5.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.0	--
Hexachlorobutadiene	ND		ug/kg	5.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	5.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	5.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	5.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Tert-Butyl Alcohol	ND		ug/kg	100	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	107		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/17 10:02
Analyst: CBN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 04 Batch: WG1030773-5					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	5.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	5.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	5.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/17 10:02
Analyst: CBN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 04 Batch: WG1030773-5					
1,2-Dichlorobenzene	ND		ug/kg	5.0	--
1,3-Dichlorobenzene	ND		ug/kg	5.0	--
1,4-Dichlorobenzene	ND		ug/kg	5.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	10	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	5.0	--
Tetrahydrofuran	ND		ug/kg	20	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	5.0	--
1,3,5-Trichlorobenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	5.0	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/17 10:02
Analyst: CBN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 04 Batch: WG1030773-5					
p-Chlorotoluene	ND		ug/kg	5.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.0	--
Hexachlorobutadiene	ND		ug/kg	5.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	5.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	5.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	5.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Tert-Butyl Alcohol	ND		ug/kg	100	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG1030739-3 WG1030739-4								
Methylene chloride	105		101		70-130	4		30
1,1-Dichloroethane	113		111		70-130	2		30
Chloroform	115		112		70-130	3		30
Carbon tetrachloride	**131**	Q	130		70-130	1		30
1,2-Dichloropropane	111		107		70-130	4		30
Dibromochloromethane	99		99		70-130	0		30
1,1,2-Trichloroethane	96		92		70-130	4		30
Tetrachloroethene	103		99		70-130	4		30
Chlorobenzene	98		95		70-130	3		30
Trichlorofluoromethane	134		131		70-139	2		30
1,2-Dichloroethane	121		121		70-130	0		30
1,1,1-Trichloroethane	124		120		70-130	3		30
Bromodichloromethane	114		111		70-130	3		30
trans-1,3-Dichloropropene	101		100		70-130	1		30
cis-1,3-Dichloropropene	104		103		70-130	1		30
1,1-Dichloropropene	118		111		70-130	6		30
Bromoform	90		89		70-130	1		30
1,1,2,2-Tetrachloroethane	86		87		70-130	1		30
Benzene	107		104		70-130	3		30
Toluene	99		98		70-130	1		30
Ethylbenzene	102		99		70-130	3		30
Chloromethane	126		120		52-130	5		30
Bromomethane	115		117		57-147	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG1030739-3 WG1030739-4								
Vinyl chloride	**145**	Q	**135**	Q	67-130	7		30
Chloroethane	120		113		50-151	6		30
1,1-Dichloroethene	97		104		65-135	7		30
trans-1,2-Dichloroethene	107		102		70-130	5		30
Trichloroethene	115		112		70-130	3		30
1,2-Dichlorobenzene	96		92		70-130	4		30
1,3-Dichlorobenzene	93		92		70-130	1		30
1,4-Dichlorobenzene	96		88		70-130	9		30
Methyl tert butyl ether	80		**65**	Q	66-130	21		30
p/m-Xylene	101		96		70-130	5		30
o-Xylene	99		96		70-130	3		30
cis-1,2-Dichloroethene	106		104		70-130	2		30
Dibromomethane	107		104		70-130	3		30
1,2,3-Trichloropropane	95		93		68-130	2		30
Styrene	99		94		70-130	5		30
Dichlorodifluoromethane	134		122		30-146	9		30
Acetone	118		118		54-140	0		30
Carbon disulfide	66		69		59-130	4		30
2-Butanone	105		98		70-130	7		30
4-Methyl-2-pentanone	96		96		70-130	0		30
2-Hexanone	102		100		70-130	2		30
Bromochloromethane	105		103		70-130	2		30
Tetrahydrofuran	111		126		66-130	13		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG1030739-3 WG1030739-4								
2,2-Dichloropropane	120		115		70-130	4		30
1,2-Dibromoethane	96		95		70-130	1		30
1,1,1,2-Tetrachloroethane	101		98		70-130	3		30
Bromobenzene	96		93		70-130	3		30
n-Butylbenzene	107		96		70-130	11		30
sec-Butylbenzene	99		99		70-130	0		30
tert-Butylbenzene	101		95		70-130	6		30
1,3,5-Trichlorobenzene	100		97		70-139	3		30
o-Chlorotoluene	99		96		70-130	3		30
p-Chlorotoluene	101		99		70-130	2		30
1,2-Dibromo-3-chloropropane	82		82		68-130	0		30
Hexachlorobutadiene	104		99		67-130	5		30
Isopropylbenzene	104		98		70-130	6		30
p-Isopropyltoluene	101		98		70-130	3		30
Naphthalene	91		88		70-130	3		30
n-Propylbenzene	104		96		70-130	8		30
1,2,3-Trichlorobenzene	94		91		70-130	3		30
1,2,4-Trichlorobenzene	96		93		70-130	3		30
1,3,5-Trimethylbenzene	104		101		70-130	3		30
1,2,4-Trimethylbenzene	103		98		70-130	5		30
Ethyl ether	107		102		67-130	5		30
Isopropyl Ether	121		118		66-130	3		30
Tert-Butyl Alcohol	119		115		70-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG1030739-3 WG1030739-4								
Ethyl-Tert-Butyl-Ether	108		100		70-130	8		30
Tertiary-Amyl Methyl Ether	106		101		70-130	5		30
1,4-Dioxane	90		91		65-136	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	117		115		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	109		104		70-130
Dibromofluoromethane	109		107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 04 Batch: WG1030773-3 WG1030773-4								
Methylene chloride	100		100		70-130	0		30
1,1-Dichloroethane	112		107		70-130	5		30
Chloroform	112		109		70-130	3		30
Carbon tetrachloride	129		122		70-130	6		30
1,2-Dichloropropane	114		108		70-130	5		30
Dibromochloromethane	97		93		70-130	4		30
1,1,2-Trichloroethane	96		94		70-130	2		30
Tetrachloroethene	105		97		70-130	8		30
Chlorobenzene	100		94		70-130	6		30
Trichlorofluoromethane	135		124		70-139	8		30
1,2-Dichloroethane	114		109		70-130	4		30
1,1,1-Trichloroethane	122		116		70-130	5		30
Bromodichloromethane	113		109		70-130	4		30
trans-1,3-Dichloropropene	100		97		70-130	3		30
cis-1,3-Dichloropropene	107		102		70-130	5		30
1,1-Dichloropropene	119		113		70-130	5		30
Bromoform	87		88		70-130	1		30
1,1,2,2-Tetrachloroethane	89		88		70-130	1		30
Benzene	112		107		70-130	5		30
Toluene	103		97		70-130	6		30
Ethylbenzene	104		97		70-130	7		30
Chloromethane	117		114		52-130	3		30
Bromomethane	125		120		57-147	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 04 Batch: WG1030773-3 WG1030773-4								
Vinyl chloride	**132**	Q	**138**	Q	67-130	4		30
Chloroethane	122		117		50-151	4		30
1,1-Dichloroethene	111		107		65-135	4		30
trans-1,2-Dichloroethene	109		105		70-130	4		30
Trichloroethene	117		110		70-130	6		30
1,2-Dichlorobenzene	96		92		70-130	4		30
1,3-Dichlorobenzene	97		93		70-130	4		30
1,4-Dichlorobenzene	95		90		70-130	5		30
Methyl tert butyl ether	**65**	Q	68		66-130	5		30
p/m-Xylene	102		97		70-130	5		30
o-Xylene	100		94		70-130	6		30
cis-1,2-Dichloroethene	108		103		70-130	5		30
Dibromomethane	105		104		70-130	1		30
1,2,3-Trichloropropane	92		94		68-130	2		30
Styrene	99		93		70-130	6		30
Dichlorodifluoromethane	143		140		30-146	2		30
Acetone	106		106		54-140	0		30
Carbon disulfide	75		75		59-130	0		30
2-Butanone	90		89		70-130	1		30
4-Methyl-2-pentanone	98		93		70-130	5		30
2-Hexanone	96		93		70-130	3		30
Bromochloromethane	106		100		70-130	6		30
Tetrahydrofuran	118		101		66-130	16		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 04 Batch: WG1030773-3 WG1030773-4								
2,2-Dichloropropane	118		111		70-130	6		30
1,2-Dibromoethane	94		93		70-130	1		30
1,1,1,2-Tetrachloroethane	97		95		70-130	2		30
Bromobenzene	94		92		70-130	2		30
n-Butylbenzene	104		101		70-130	3		30
sec-Butylbenzene	105		101		70-130	4		30
tert-Butylbenzene	102		99		70-130	3		30
1,3,5-Trichlorobenzene	98		96		70-139	2		30
o-Chlorotoluene	101		98		70-130	3		30
p-Chlorotoluene	103		99		70-130	4		30
1,2-Dibromo-3-chloropropane	76		84		68-130	10		30
Hexachlorobutadiene	102		98		67-130	4		30
Isopropylbenzene	104		100		70-130	4		30
p-Isopropyltoluene	101		99		70-130	2		30
Naphthalene	89		88		70-130	1		30
n-Propylbenzene	105		100		70-130	5		30
1,2,3-Trichlorobenzene	93		90		70-130	3		30
1,2,4-Trichlorobenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	102		102		70-130	0		30
1,2,4-Trimethylbenzene	104		101		70-130	3		30
Ethyl ether	104		102		67-130	2		30
Isopropyl Ether	113		112		66-130	1		30
Tert-Butyl Alcohol	107		112		70-130	5		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 04 Batch: WG1030773-3 WG1030773-4								
Ethyl-Tert-Butyl-Ether	100		97		70-130	3		30
Tertiary-Amyl Methyl Ether	105		99		70-130	6		30
1,4-Dioxane	105		108		65-136	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		106		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	103		107		70-130
Dibromofluoromethane	104		104		70-130

SEMIVOLATILES

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 D2
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 12:45
Analyst: CB
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Fluoranthene	14000		ug/kg	1100	--	10
Phenanthrene	23000		ug/kg	1100	--	10
Pyrene	28000		ug/kg	1100	--	10

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 D
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 07:50
Analyst: RC
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	2800		ug/kg	300	--	2
Benzidine	ND		ug/kg	1200	--	2
1,2,4-Trichlorobenzene	ND		ug/kg	370	--	2
Hexachlorobenzene	ND		ug/kg	220	--	2
Bis(2-chloroethyl)ether	ND		ug/kg	330	--	2
2-Chloronaphthalene	ND		ug/kg	370	--	2
1,2-Dichlorobenzene	ND		ug/kg	370	--	2
1,3-Dichlorobenzene	ND		ug/kg	370	--	2
1,4-Dichlorobenzene	ND		ug/kg	370	--	2
3,3'-Dichlorobenzidine	ND		ug/kg	370	--	2
2,4-Dinitrotoluene	ND		ug/kg	370	--	2
2,6-Dinitrotoluene	ND		ug/kg	370	--	2
Azobenzene	ND		ug/kg	370	--	2
Fluoranthene	18000	E	ug/kg	220	--	2
4-Chlorophenyl phenyl ether	ND		ug/kg	370	--	2
4-Bromophenyl phenyl ether	ND		ug/kg	370	--	2
Bis(2-chloroisopropyl)ether	ND		ug/kg	440	--	2
Bis(2-chloroethoxy)methane	ND		ug/kg	400	--	2
Hexachlorobutadiene	ND		ug/kg	370	--	2
Hexachlorocyclopentadiene	ND		ug/kg	1000	--	2
Hexachloroethane	ND		ug/kg	300	--	2
Isophorone	ND		ug/kg	330	--	2
Naphthalene	780		ug/kg	370	--	2
Nitrobenzene	ND		ug/kg	330	--	2
NDPA/DPA	ND		ug/kg	300	--	2
n-Nitrosodi-n-propylamine	ND		ug/kg	370	--	2
Bis(2-ethylhexyl)phthalate	ND		ug/kg	370	--	2
Butyl benzyl phthalate	ND		ug/kg	370	--	2
Di-n-butylphthalate	ND		ug/kg	370	--	2
Di-n-octylphthalate	ND		ug/kg	370	--	2

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 D Date Collected: 08/03/17 09:30

Client ID: WC1 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	370	--	2
Dimethyl phthalate	ND		ug/kg	370	--	2
Benzo(a)anthracene	12000		ug/kg	220	--	2
Benzo(a)pyrene	13000		ug/kg	300	--	2
Benzo(b)fluoranthene	11000		ug/kg	220	--	2
Benzo(k)fluoranthene	2500		ug/kg	220	--	2
Chrysene	10000		ug/kg	220	--	2
Acenaphthylene	ND		ug/kg	300	--	2
Anthracene	6600		ug/kg	220	--	2
Benzo(ghi)perylene	6900		ug/kg	300	--	2
Fluorene	2300		ug/kg	370	--	2
Phenanthrene	28000	E	ug/kg	220	--	2
Dibenzo(a,h)anthracene	1400		ug/kg	220	--	2
Indeno(1,2,3-cd)pyrene	6100		ug/kg	300	--	2
Pyrene	37000	E	ug/kg	220	--	2
Biphenyl	ND		ug/kg	840	--	2
Aniline	ND		ug/kg	440	--	2
4-Chloroaniline	ND		ug/kg	370	--	2
1-Methylnaphthalene	1100		ug/kg	370	--	2
2-Nitroaniline	ND		ug/kg	370	--	2
3-Nitroaniline	ND		ug/kg	370	--	2
4-Nitroaniline	ND		ug/kg	370	--	2
Dibenzofuran	ND		ug/kg	370	--	2
2-Methylnaphthalene	980		ug/kg	440	--	2
n-Nitrosodimethylamine	ND		ug/kg	740	--	2
2,4,6-Trichlorophenol	ND		ug/kg	220	--	2
p-Chloro-m-cresol	ND		ug/kg	370	--	2
2-Chlorophenol	ND		ug/kg	370	--	2
2,4-Dichlorophenol	ND		ug/kg	330	--	2
2,4-Dimethylphenol	ND		ug/kg	370	--	2
2-Nitrophenol	ND		ug/kg	800	--	2
4-Nitrophenol	ND		ug/kg	520	--	2
2,4-Dinitrophenol	ND		ug/kg	1800	--	2
4,6-Dinitro-o-cresol	ND		ug/kg	960	--	2
Pentachlorophenol	ND		ug/kg	300	--	2
Phenol	ND		ug/kg	370	--	2
2-Methylphenol	ND		ug/kg	370	--	2
3-Methylphenol/4-Methylphenol	ND		ug/kg	530	--	2
2,4,5-Trichlorophenol	ND		ug/kg	370	--	2

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 D
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	1200	--	2
Benzyl Alcohol	ND		ug/kg	370	--	2
Carbazole	ND		ug/kg	370	--	2
Pyridine	ND		ug/kg	400	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	73		30-120
2,4,6-Tribromophenol	82		10-136
4-Terphenyl-d14	78		18-120

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 05:57
Analyst: RC
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Benzidine	ND		ug/kg	580	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	--	1
Hexachlorobenzene	ND		ug/kg	110	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	--	1
2-Chloronaphthalene	ND		ug/kg	180	--	1
1,2-Dichlorobenzene	ND		ug/kg	180	--	1
1,3-Dichlorobenzene	ND		ug/kg	180	--	1
1,4-Dichlorobenzene	ND		ug/kg	180	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	--	1
2,4-Dinitrotoluene	ND		ug/kg	180	--	1
2,6-Dinitrotoluene	ND		ug/kg	180	--	1
Azobenzene	ND		ug/kg	180	--	1
Fluoranthene	180		ug/kg	110	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	--	1
Hexachlorobutadiene	ND		ug/kg	180	--	1
Hexachlorocyclopentadiene	ND		ug/kg	500	--	1
Hexachloroethane	ND		ug/kg	140	--	1
Isophorone	ND		ug/kg	160	--	1
Naphthalene	ND		ug/kg	180	--	1
Nitrobenzene	ND		ug/kg	160	--	1
NDPA/DPA	ND		ug/kg	140	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	--	1
Butyl benzyl phthalate	ND		ug/kg	180	--	1
Di-n-butylphthalate	ND		ug/kg	180	--	1
Di-n-octylphthalate	ND		ug/kg	180	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02 Date Collected: 08/03/17 09:40

Client ID: WC2 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	--	1
Dimethyl phthalate	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	130		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	120		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	230		ug/kg	110	--	1
Biphenyl	ND		ug/kg	400	--	1
Aniline	ND		ug/kg	210	--	1
4-Chloroaniline	ND		ug/kg	180	--	1
1-Methylnaphthalene	ND		ug/kg	180	--	1
2-Nitroaniline	ND		ug/kg	180	--	1
3-Nitroaniline	ND		ug/kg	180	--	1
4-Nitroaniline	ND		ug/kg	180	--	1
Dibenzofuran	ND		ug/kg	180	--	1
2-Methylnaphthalene	ND		ug/kg	210	--	1
n-Nitrosodimethylamine	ND		ug/kg	350	--	1
2,4,6-Trichlorophenol	ND		ug/kg	110	--	1
p-Chloro-m-cresol	ND		ug/kg	180	--	1
2-Chlorophenol	ND		ug/kg	180	--	1
2,4-Dichlorophenol	ND		ug/kg	160	--	1
2,4-Dimethylphenol	ND		ug/kg	180	--	1
2-Nitrophenol	ND		ug/kg	380	--	1
4-Nitrophenol	ND		ug/kg	250	--	1
2,4-Dinitrophenol	ND		ug/kg	850	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	--	1
Pentachlorophenol	ND		ug/kg	140	--	1
Phenol	ND		ug/kg	180	--	1
2-Methylphenol	ND		ug/kg	180	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	--	1
2,4,5-Trichlorophenol	ND		ug/kg	180	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	570	--	1
Benzyl Alcohol	ND		ug/kg	180	--	1
Carbazole	ND		ug/kg	180	--	1
Pyridine	ND		ug/kg	190	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	72		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	70		30-120
2,4,6-Tribromophenol	78		10-136
4-Terphenyl-d14	61		18-120

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 06:25
Analyst: RC
Percent Solids: 97%

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Benzidine	ND		ug/kg	560	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	--	1
Hexachlorobenzene	ND		ug/kg	100	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	150	--	1
2-Chloronaphthalene	ND		ug/kg	170	--	1
1,2-Dichlorobenzene	ND		ug/kg	170	--	1
1,3-Dichlorobenzene	ND		ug/kg	170	--	1
1,4-Dichlorobenzene	ND		ug/kg	170	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	--	1
2,4-Dinitrotoluene	ND		ug/kg	170	--	1
2,6-Dinitrotoluene	ND		ug/kg	170	--	1
Azobenzene	ND		ug/kg	170	--	1
Fluoranthene	490		ug/kg	100	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--	1
Hexachlorobutadiene	ND		ug/kg	170	--	1
Hexachlorocyclopentadiene	ND		ug/kg	480	--	1
Hexachloroethane	ND		ug/kg	140	--	1
Isophorone	ND		ug/kg	150	--	1
Naphthalene	ND		ug/kg	170	--	1
Nitrobenzene	ND		ug/kg	150	--	1
NDPA/DPA	ND		ug/kg	140	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	--	1
Butyl benzyl phthalate	ND		ug/kg	170	--	1
Di-n-butylphthalate	ND		ug/kg	170	--	1
Di-n-octylphthalate	ND		ug/kg	170	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03 Date Collected: 08/03/17 09:50

Client ID: WC3 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	170	--	1
Dimethyl phthalate	ND		ug/kg	170	--	1
Benzo(a)anthracene	310		ug/kg	100	--	1
Benzo(a)pyrene	340		ug/kg	140	--	1
Benzo(b)fluoranthene	310		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	290		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	100		ug/kg	100	--	1
Benzo(ghi)perylene	210		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	550		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	180		ug/kg	140	--	1
Pyrene	980		ug/kg	100	--	1
Biphenyl	ND		ug/kg	380	--	1
Aniline	ND		ug/kg	200	--	1
4-Chloroaniline	ND		ug/kg	170	--	1
1-Methylnaphthalene	ND		ug/kg	170	--	1
2-Nitroaniline	ND		ug/kg	170	--	1
3-Nitroaniline	ND		ug/kg	170	--	1
4-Nitroaniline	ND		ug/kg	170	--	1
Dibenzofuran	ND		ug/kg	170	--	1
2-Methylnaphthalene	ND		ug/kg	200	--	1
n-Nitrosodimethylamine	ND		ug/kg	340	--	1
2,4,6-Trichlorophenol	ND		ug/kg	100	--	1
p-Chloro-m-cresol	ND		ug/kg	170	--	1
2-Chlorophenol	ND		ug/kg	170	--	1
2,4-Dichlorophenol	ND		ug/kg	150	--	1
2,4-Dimethylphenol	ND		ug/kg	170	--	1
2-Nitrophenol	ND		ug/kg	360	--	1
4-Nitrophenol	ND		ug/kg	240	--	1
2,4-Dinitrophenol	ND		ug/kg	810	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	440	--	1
Pentachlorophenol	ND		ug/kg	140	--	1
Phenol	ND		ug/kg	170	--	1
2-Methylphenol	ND		ug/kg	170	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--	1
2,4,5-Trichlorophenol	ND		ug/kg	170	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	550	--	1
Benzyl Alcohol	ND		ug/kg	170	--	1
Carbazole	ND		ug/kg	170	--	1
Pyridine	ND		ug/kg	180	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	67		30-120
2,4,6-Tribromophenol	77		10-136
4-Terphenyl-d14	68		18-120

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 06:54
Analyst: RC
Percent Solids: 98%

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	130	--	1
Benzidine	ND		ug/kg	550	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	--	1
Hexachlorobenzene	ND		ug/kg	100	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	150	--	1
2-Chloronaphthalene	ND		ug/kg	170	--	1
1,2-Dichlorobenzene	ND		ug/kg	170	--	1
1,3-Dichlorobenzene	ND		ug/kg	170	--	1
1,4-Dichlorobenzene	ND		ug/kg	170	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	--	1
2,4-Dinitrotoluene	ND		ug/kg	170	--	1
2,6-Dinitrotoluene	ND		ug/kg	170	--	1
Azobenzene	ND		ug/kg	170	--	1
Fluoranthene	650		ug/kg	100	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--	1
Hexachlorobutadiene	ND		ug/kg	170	--	1
Hexachlorocyclopentadiene	ND		ug/kg	480	--	1
Hexachloroethane	ND		ug/kg	130	--	1
Isophorone	ND		ug/kg	150	--	1
Naphthalene	ND		ug/kg	170	--	1
Nitrobenzene	ND		ug/kg	150	--	1
NDPA/DPA	ND		ug/kg	130	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	--	1
Butyl benzyl phthalate	860		ug/kg	170	--	1
Di-n-butylphthalate	ND		ug/kg	170	--	1
Di-n-octylphthalate	ND		ug/kg	170	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04 Date Collected: 08/03/17 10:00

Client ID: WC4 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	170	--	1
Dimethyl phthalate	ND		ug/kg	170	--	1
Benzo(a)anthracene	420		ug/kg	100	--	1
Benzo(a)pyrene	460		ug/kg	130	--	1
Benzo(b)fluoranthene	410		ug/kg	100	--	1
Benzo(k)fluoranthene	120		ug/kg	100	--	1
Chrysene	390		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	130	--	1
Anthracene	130		ug/kg	100	--	1
Benzo(ghi)perylene	290		ug/kg	130	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	720		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	250		ug/kg	130	--	1
Pyrene	1300		ug/kg	100	--	1
Biphenyl	ND		ug/kg	380	--	1
Aniline	ND		ug/kg	200	--	1
4-Chloroaniline	ND		ug/kg	170	--	1
1-Methylnaphthalene	ND		ug/kg	170	--	1
2-Nitroaniline	ND		ug/kg	170	--	1
3-Nitroaniline	ND		ug/kg	170	--	1
4-Nitroaniline	ND		ug/kg	170	--	1
Dibenzofuran	ND		ug/kg	170	--	1
2-Methylnaphthalene	ND		ug/kg	200	--	1
n-Nitrosodimethylamine	ND		ug/kg	330	--	1
2,4,6-Trichlorophenol	ND		ug/kg	100	--	1
p-Chloro-m-cresol	ND		ug/kg	170	--	1
2-Chlorophenol	ND		ug/kg	170	--	1
2,4-Dichlorophenol	ND		ug/kg	150	--	1
2,4-Dimethylphenol	ND		ug/kg	170	--	1
2-Nitrophenol	ND		ug/kg	360	--	1
4-Nitrophenol	ND		ug/kg	230	--	1
2,4-Dinitrophenol	ND		ug/kg	800	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	430	--	1
Pentachlorophenol	ND		ug/kg	130	--	1
Phenol	ND		ug/kg	170	--	1
2-Methylphenol	ND		ug/kg	170	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--	1
2,4,5-Trichlorophenol	ND		ug/kg	170	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04 Date Collected: 08/03/17 10:00

Client ID: WC4 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	540	--	1
Benzyl Alcohol	ND		ug/kg	170	--	1
Carbazole	ND		ug/kg	170	--	1
Pyridine	ND		ug/kg	180	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	89		25-120
Phenol-d6	94		10-120
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	82		30-120
2,4,6-Tribromophenol	91		10-136
4-Terphenyl-d14	79		18-120

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/17 19:29
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1029375-1					
Acenaphthene	ND		ug/kg	130	--
Benzidine	ND		ug/kg	540	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Chlorophenyl phenyl ether	ND		ug/kg	160	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachlorocyclopentadiene	ND		ug/kg	470	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
NDPA/DPA	ND		ug/kg	130	--
n-Nitrosodi-n-propylamine	ND		ug/kg	160	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/17 19:29
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1029375-1					
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Biphenyl	ND		ug/kg	380	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
1-Methylnaphthalene	ND		ug/kg	160	--
2-Nitroaniline	ND		ug/kg	160	--
3-Nitroaniline	ND		ug/kg	160	--
4-Nitroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
n-Nitrosodimethylamine	ND		ug/kg	330	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
p-Chloro-m-cresol	ND		ug/kg	160	--
2-Chlorophenol	ND		ug/kg	160	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/17 19:29
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1029375-1					
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
4,6-Dinitro-o-cresol	ND		ug/kg	430	--
Pentachlorophenol	ND		ug/kg	130	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Benzoic Acid	ND		ug/kg	530	--
Benzyl Alcohol	ND		ug/kg	160	--
Carbazole	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/17 19:29
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1029375-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		25-120
Phenol-d6	69		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	71		30-120
2,4,6-Tribromophenol	77		10-136
4-Terphenyl-d14	77		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1029375-2 WG1029375-3								
Acenaphthene	85		90		31-137	6		50
Benzidine	48		53		10-66	10		50
1,2,4-Trichlorobenzene	71		79		38-107	11		50
Hexachlorobenzene	92		101		40-140	9		50
Bis(2-chloroethyl)ether	72		77		40-140	7		50
2-Chloronaphthalene	83		86		40-140	4		50
1,2-Dichlorobenzene	69		73		40-140	6		50
1,3-Dichlorobenzene	65		70		40-140	7		50
1,4-Dichlorobenzene	67		71		28-104	6		50
3,3'-Dichlorobenzidine	66		72		40-140	9		50
2,4-Dinitrotoluene	98		100		40-132	2		50
2,6-Dinitrotoluene	88		93		40-140	6		50
Azobenzene	95		100		40-140	5		50
Fluoranthene	85		91		40-140	7		50
4-Chlorophenyl phenyl ether	95		96		40-140	1		50
4-Bromophenyl phenyl ether	99		103		40-140	4		50
Bis(2-chloroisopropyl)ether	71		76		40-140	7		50
Bis(2-chloroethoxy)methane	79		84		40-117	6		50
Hexachlorobutadiene	85		86		40-140	1		50
Hexachlorocyclopentadiene	83		88		40-140	6		50
Hexachloroethane	73		79		40-140	8		50
Isophorone	82		88		40-140	7		50
Naphthalene	79		82		40-140	4		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1029375-2 WG1029375-3								
Nitrobenzene	87		90		40-140	3		50
NDPA/DPA	91		95		36-157	4		50
n-Nitrosodi-n-propylamine	78		84		32-121	7		50
Bis(2-ethylhexyl)phthalate	82		86		40-140	5		50
Butyl benzyl phthalate	88		98		40-140	11		50
Di-n-butylphthalate	84		91		40-140	8		50
Di-n-octylphthalate	84		90		40-140	7		50
Diethyl phthalate	91		98		40-140	7		50
Dimethyl phthalate	92		94		40-140	2		50
Benzo(a)anthracene	77		82		40-140	6		50
Benzo(a)pyrene	84		88		40-140	5		50
Benzo(b)fluoranthene	81		87		40-140	7		50
Benzo(k)fluoranthene	82		85		40-140	4		50
Chrysene	76		80		40-140	5		50
Acenaphthylene	83		88		40-140	6		50
Anthracene	80		87		40-140	8		50
Benzo(ghi)perylene	80		85		40-140	6		50
Fluorene	88		96		40-140	9		50
Phenanthrene	80		86		40-140	7		50
Dibenzo(a,h)anthracene	80		86		40-140	7		50
Indeno(1,2,3-cd)pyrene	82		88		40-140	7		50
Pyrene	85		90		35-142	6		50
Biphenyl	86		90		54-104	5		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1029375-2 WG1029375-3								
Aniline	54		60		40-140	11		50
4-Chloroaniline	77		83		40-140	8		50
1-Methylnaphthalene	93		97		26-130	4		50
2-Nitroaniline	98		104		47-134	6		50
3-Nitroaniline	91		97		26-129	6		50
4-Nitroaniline	103		107		41-125	4		50
Dibenzofuran	88		93		40-140	6		50
2-Methylnaphthalene	79		82		40-140	4		50
n-Nitrosodimethylamine	68		71		22-100	4		50
2,4,6-Trichlorophenol	99		101		30-130	2		50
p-Chloro-m-cresol	98		98		26-103	0		50
2-Chlorophenol	78		82		25-102	5		50
2,4-Dichlorophenol	84		90		30-130	7		50
2,4-Dimethylphenol	90		100		30-130	11		50
2-Nitrophenol	87		94		30-130	8		50
4-Nitrophenol	**136**	Q	**136**	Q	11-114	0		50
2,4-Dinitrophenol	106		106		4-130	0		50
4,6-Dinitro-o-cresol	119		127		10-130	7		50
Pentachlorophenol	101		107		17-109	6		50
Phenol	70		76		26-90	8		50
2-Methylphenol	80		88		30-130.	10		50
3-Methylphenol/4-Methylphenol	82		88		30-130	7		50
2,4,5-Trichlorophenol	94		100		30-130	6		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1029375-2 WG1029375-3								
Benzoic Acid	**0**	Q	**0**	Q	10-110	NC		50
Benzyl Alcohol	85		91		40-140	7		50
Carbazole	82		88		54-128	7		50
Pyridine	56		59		10-93	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	70		74		25-120
Phenol-d6	73		78		10-120
Nitrobenzene-d5	83		89		23-120
2-Fluorobiphenyl	77		82		30-120
2,4,6-Tribromophenol	102		101		10-136
4-Terphenyl-d14	81		88		18-120

PCBS

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/09/17 11:49
Analyst: HT
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.5	--	1	A
Aroclor 1221	ND		ug/kg	36.5	--	1	A
Aroclor 1232	ND		ug/kg	36.5	--	1	A
Aroclor 1242	ND		ug/kg	36.5	--	1	A
Aroclor 1248	ND		ug/kg	36.5	--	1	A
Aroclor 1254	ND		ug/kg	36.5	--	1	B
Aroclor 1260	ND		ug/kg	36.5	--	1	B
Aroclor 1262	ND		ug/kg	36.5	--	1	A
Aroclor 1268	ND		ug/kg	36.5	--	1	A
PCBs, Total	ND		ug/kg	36.5	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/09/17 12:05
Analyst: HT
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.9	--	1	A
Aroclor 1221	ND		ug/kg	33.9	--	1	A
Aroclor 1232	ND		ug/kg	33.9	--	1	A
Aroclor 1242	ND		ug/kg	33.9	--	1	A
Aroclor 1248	ND		ug/kg	33.9	--	1	A
Aroclor 1254	ND		ug/kg	33.9	--	1	B
Aroclor 1260	ND		ug/kg	33.9	--	1	A
Aroclor 1262	ND		ug/kg	33.9	--	1	A
Aroclor 1268	ND		ug/kg	33.9	--	1	B
PCBs, Total	ND		ug/kg	33.9	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	67		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/09/17 12:22
Analyst: HT
Percent Solids: 97%

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	32.9	--	1	A
Aroclor 1221	ND		ug/kg	32.9	--	1	A
Aroclor 1232	ND		ug/kg	32.9	--	1	A
Aroclor 1242	ND		ug/kg	32.9	--	1	A
Aroclor 1248	ND		ug/kg	32.9	--	1	A
Aroclor 1254	ND		ug/kg	32.9	--	1	A
Aroclor 1260	ND		ug/kg	32.9	--	1	A
Aroclor 1262	ND		ug/kg	32.9	--	1	A
Aroclor 1268	ND		ug/kg	32.9	--	1	A
PCBs, Total	ND		ug/kg	32.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	70		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/09/17 12:39
Analyst: HT
Percent Solids: 98%

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	32.2	--	1	A
Aroclor 1221	ND		ug/kg	32.2	--	1	A
Aroclor 1232	ND		ug/kg	32.2	--	1	A
Aroclor 1242	ND		ug/kg	32.2	--	1	A
Aroclor 1248	ND		ug/kg	32.2	--	1	A
Aroclor 1254	ND		ug/kg	32.2	--	1	A
Aroclor 1260	ND		ug/kg	32.2	--	1	A
Aroclor 1262	ND		ug/kg	32.2	--	1	A
Aroclor 1268	ND		ug/kg	32.2	--	1	A
PCBs, Total	ND		ug/kg	32.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/08/17 08:49
Analyst: JW

Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 01-04 Batch: WG1029732-1						
Aroclor 1016	ND		ug/kg	31.6	--	A
Aroclor 1221	ND		ug/kg	31.6	--	A
Aroclor 1232	ND		ug/kg	31.6	--	A
Aroclor 1242	ND		ug/kg	31.6	--	A
Aroclor 1248	ND		ug/kg	31.6	--	A
Aroclor 1254	ND		ug/kg	31.6	--	A
Aroclor 1260	ND		ug/kg	31.6	--	A
Aroclor 1262	ND		ug/kg	31.6	--	A
Aroclor 1268	ND		ug/kg	31.6	--	A
PCBs, Total	ND		ug/kg	31.6	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	78		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
PCB by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1029732-2 WG1029732-3									
Aroclor 1016	77		78		40-140	1		50	A
Aroclor 1260	66		66		40-140	0		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		77		30-150	A
Decachlorobiphenyl	73		75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		82		30-150	B
Decachlorobiphenyl	87		89		30-150	B

PESTICIDES

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/09/17 09:03
Analyst: JW
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	8.76	--	1	A
Lindane	ND		ug/kg	3.65	--	1	A
Alpha-BHC	ND		ug/kg	3.65	--	1	A
Beta-BHC	ND		ug/kg	8.76	--	1	A
Heptachlor	ND		ug/kg	4.38	--	1	A
Aldrin	ND		ug/kg	8.76	--	1	A
Heptachlor epoxide	ND		ug/kg	16.4	--	1	A
Endrin	ND		ug/kg	3.65	--	1	A
Endrin aldehyde	ND		ug/kg	10.9	--	1	A
Endrin ketone	ND		ug/kg	8.76	--	1	A
Dieldrin	ND		ug/kg	5.47	--	1	A
4,4'-DDE	13.6		ug/kg	8.76	--	1	B
4,4'-DDD	ND		ug/kg	8.76	--	1	A
4,4'-DDT	ND		ug/kg	16.4	--	1	A
Endosulfan I	ND		ug/kg	8.76	--	1	A
Endosulfan II	25.7	P	ug/kg	8.76	--	1	B
Endosulfan sulfate	ND		ug/kg	3.65	--	1	A
Methoxychlor	ND		ug/kg	16.4	--	1	A
Toxaphene	ND		ug/kg	164	--	1	A
Chlordane	ND		ug/kg	71.1	--	1	A
cis-Chlordane	ND		ug/kg	10.9	--	1	A
trans-Chlordane	ND		ug/kg	10.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	100		30-150	B
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	92		30-150	A

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 08/09/17 00:23
Analyst: SL
Percent Solids: 90%
Methylation Date: 08/07/17 07:13

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 08/06/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3690	--	1	B
MCPA	ND		ug/kg	3690	--	1	A
Dalapon	ND		ug/kg	36.9	--	1	A
Dicamba	ND		ug/kg	36.9	--	1	A
Dichloroprop	ND		ug/kg	36.9	--	1	A
2,4-D	ND		ug/kg	184	--	1	A
2,4-DB	ND		ug/kg	184	--	1	A
2,4,5-T	ND		ug/kg	184	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	184	--	1	B
Dinoseb	ND		ug/kg	36.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	73		30-150	A
DCAA	71		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/09/17 09:16
Analyst: JW
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	8.34	--	1	A
Lindane	ND		ug/kg	3.47	--	1	A
Alpha-BHC	ND		ug/kg	3.47	--	1	A
Beta-BHC	ND		ug/kg	8.34	--	1	A
Heptachlor	ND		ug/kg	4.17	--	1	A
Aldrin	ND		ug/kg	8.34	--	1	A
Heptachlor epoxide	ND		ug/kg	15.6	--	1	A
Endrin	ND		ug/kg	3.47	--	1	A
Endrin aldehyde	ND		ug/kg	10.4	--	1	A
Endrin ketone	ND		ug/kg	8.34	--	1	A
Dieldrin	ND		ug/kg	5.21	--	1	B
4,4'-DDE	10.0		ug/kg	8.34	--	1	A
4,4'-DDD	ND		ug/kg	8.34	--	1	A
4,4'-DDT	16.9		ug/kg	15.6	--	1	B
Endosulfan I	ND		ug/kg	8.34	--	1	A
Endosulfan II	ND		ug/kg	8.34	--	1	A
Endosulfan sulfate	ND		ug/kg	3.47	--	1	A
Methoxychlor	ND		ug/kg	15.6	--	1	A
Toxaphene	ND		ug/kg	156	--	1	A
Chlordane	ND		ug/kg	67.7	--	1	A
cis-Chlordane	ND		ug/kg	10.4	--	1	A
trans-Chlordane	ND		ug/kg	10.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	96		30-150	B
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	71		30-150	A

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 08/09/17 00:43
Analyst: SL
Percent Solids: 93%
Methylation Date: 08/07/17 07:13

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 08/06/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3540	--	1	A
MCPA	ND		ug/kg	3540	--	1	A
Dalapon	ND		ug/kg	35.4	--	1	A
Dicamba	ND		ug/kg	35.4	--	1	A
Dichloroprop	ND		ug/kg	35.4	--	1	A
2,4-D	ND		ug/kg	177	--	1	B
2,4-DB	ND		ug/kg	177	--	1	A
2,4,5-T	ND		ug/kg	177	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	177	--	1	A
Dinoseb	ND		ug/kg	35.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	83		30-150	A
DCAA	77		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/09/17 09:29
Analyst: JW
Percent Solids: 97%

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	8.15	--	1	A
Lindane	ND		ug/kg	3.39	--	1	A
Alpha-BHC	ND		ug/kg	3.39	--	1	A
Beta-BHC	ND		ug/kg	8.15	--	1	A
Heptachlor	ND		ug/kg	4.07	--	1	A
Aldrin	ND		ug/kg	8.15	--	1	A
Heptachlor epoxide	ND		ug/kg	15.3	--	1	A
Endrin	ND		ug/kg	3.39	--	1	A
Endrin aldehyde	ND		ug/kg	10.2	--	1	A
Endrin ketone	ND		ug/kg	8.15	--	1	A
Dieldrin	ND		ug/kg	5.09	--	1	A
4,4'-DDE	ND		ug/kg	8.15	--	1	B
4,4'-DDD	ND		ug/kg	8.15	--	1	A
4,4'-DDT	ND		ug/kg	15.3	--	1	B
Endosulfan I	ND		ug/kg	8.15	--	1	A
Endosulfan II	ND		ug/kg	8.15	--	1	A
Endosulfan sulfate	ND		ug/kg	3.39	--	1	A
Methoxychlor	ND		ug/kg	15.3	--	1	A
Toxaphene	ND		ug/kg	153	--	1	A
Chlordane	ND		ug/kg	66.2	--	1	A
cis-Chlordane	ND		ug/kg	10.2	--	1	A
trans-Chlordane	ND		ug/kg	10.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	109		30-150	B
2,4,5,6-Tetrachloro-m-xylene	93		30-150	A
Decachlorobiphenyl	79		30-150	A

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 08/09/17 01:22
Analyst: SL
Percent Solids: 97%
Methylation Date: 08/07/17 07:13

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 08/06/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3380	--	1	A
MCPA	ND		ug/kg	3380	--	1	A
Dalapon	ND		ug/kg	33.8	--	1	A
Dicamba	ND		ug/kg	33.8	--	1	A
Dichloroprop	ND		ug/kg	33.8	--	1	A
2,4-D	ND		ug/kg	169	--	1	A
2,4-DB	ND		ug/kg	169	--	1	A
2,4,5-T	ND		ug/kg	169	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	169	--	1	A
Dinoseb	ND		ug/kg	33.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	88		30-150	A
DCAA	86		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/09/17 09:43
Analyst: JW
Percent Solids: 98%

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	7.92	--	1	A
Lindane	ND		ug/kg	3.30	--	1	A
Alpha-BHC	ND		ug/kg	3.30	--	1	A
Beta-BHC	ND		ug/kg	7.92	--	1	A
Heptachlor	ND		ug/kg	3.96	--	1	A
Aldrin	ND		ug/kg	7.92	--	1	A
Heptachlor epoxide	ND		ug/kg	14.8	--	1	A
Endrin	ND		ug/kg	3.30	--	1	A
Endrin aldehyde	ND		ug/kg	9.90	--	1	A
Endrin ketone	ND		ug/kg	7.92	--	1	B
Dieldrin	ND		ug/kg	4.95	--	1	A
4,4'-DDE	ND		ug/kg	7.92	--	1	B
4,4'-DDD	ND		ug/kg	7.92	--	1	A
4,4'-DDT	15.7		ug/kg	14.8	--	1	A
Endosulfan I	ND		ug/kg	7.92	--	1	A
Endosulfan II	ND		ug/kg	7.92	--	1	A
Endosulfan sulfate	ND		ug/kg	3.30	--	1	A
Methoxychlor	ND		ug/kg	14.8	--	1	A
Toxaphene	ND		ug/kg	148	--	1	A
Chlordane	ND		ug/kg	64.4	--	1	A
cis-Chlordane	ND		ug/kg	9.90	--	1	A
trans-Chlordane	ND		ug/kg	9.90	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	83		30-150	B
2,4,5,6-Tetrachloro-m-xylene	92		30-150	A
Decachlorobiphenyl	81		30-150	A

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 08/09/17 01:41
Analyst: SL
Percent Solids: 98%
Methylation Date: 08/07/17 07:13

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 08/06/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3350	--	1	B
MCPA	ND		ug/kg	3350	--	1	A
Dalapon	ND		ug/kg	33.5	--	1	A
Dicamba	ND		ug/kg	33.5	--	1	A
Dichloroprop	ND		ug/kg	33.5	--	1	A
2,4-D	ND		ug/kg	168	--	1	B
2,4-DB	ND		ug/kg	168	--	1	A
2,4,5-T	ND		ug/kg	168	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	168	--	1	A
Dinoseb	ND		ug/kg	33.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	76		30-150	A
DCAA	76		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 08/08/17 23:25
Analyst: SL

Extraction Method: EPA 8151A
Extraction Date: 08/06/17 02:11

Methylation Date: 08/07/17 07:13

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01-04 Batch: WG1029358-1						
MCPP	ND		ug/kg	3250	--	A
MCPA	ND		ug/kg	3250	--	A
Dalapon	ND		ug/kg	32.5	--	A
Dicamba	ND		ug/kg	32.5	--	A
Dichloroprop	ND		ug/kg	32.5	--	A
2,4-D	ND		ug/kg	162	--	A
2,4-DB	ND		ug/kg	162	--	A
2,4,5-T	ND		ug/kg	162	--	A
2,4,5-TP (Silvex)	ND		ug/kg	162	--	A
Dinoseb	ND		ug/kg	32.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	61		30-150	A
DCAA	64		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/09/17 10:35
Analyst: JW

Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01-04 Batch: WG1029384-1						
Delta-BHC	ND		ug/kg	7.85	--	A
Lindane	ND		ug/kg	3.27	--	A
Alpha-BHC	ND		ug/kg	3.27	--	A
Beta-BHC	ND		ug/kg	7.85	--	A
Heptachlor	ND		ug/kg	3.92	--	A
Aldrin	ND		ug/kg	7.85	--	A
Heptachlor epoxide	ND		ug/kg	14.7	--	A
Endrin	ND		ug/kg	3.27	--	A
Endrin aldehyde	ND		ug/kg	9.81	--	A
Endrin ketone	ND		ug/kg	7.85	--	A
Dieldrin	ND		ug/kg	4.90	--	A
4,4'-DDE	ND		ug/kg	7.85	--	A
4,4'-DDD	ND		ug/kg	7.85	--	A
4,4'-DDT	ND		ug/kg	14.7	--	A
Endosulfan I	ND		ug/kg	7.85	--	A
Endosulfan II	ND		ug/kg	7.85	--	A
Endosulfan sulfate	ND		ug/kg	3.27	--	A
Methoxychlor	ND		ug/kg	14.7	--	A
Toxaphene	ND		ug/kg	147	--	A
Chlordane	ND		ug/kg	63.8	--	A
cis-Chlordane	ND		ug/kg	9.81	--	A
trans-Chlordane	ND		ug/kg	9.81	--	A

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/09/17 10:35
Analyst: JW

Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01-04 Batch: WG1029384-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	85		30-150	B
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	74		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1029358-2 WG1029358-3									
MCPP	111		106		30-150	5		30	A
MCPA	99		96		30-150	3		30	A
Dalapon	66		64		30-150	3		30	A
Dicamba	82		83		30-150	1		30	A
Dichloroprop	88		101		30-150	14		30	A
2,4-D	87		92		30-150	6		30	A
2,4-DB	83		85		30-150	2		30	A
2,4,5-T	88		87		30-150	1		30	A
2,4,5-TP (Silvex)	81		78		30-150	4		30	A
Dinoseb	72		**9**	Q	30-150	**158**	Q	30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	69		70		30-150	A
DCAA	80		78		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1029384-2 WG1029384-3									
Delta-BHC	81		102		30-150	23		30	A
Lindane	77		96		30-150	22		30	A
Alpha-BHC	80		98		30-150	20		30	A
Beta-BHC	100		127		30-150	24		30	A
Heptachlor	88		105		30-150	18		30	A
Aldrin	80		98		30-150	20		30	A
Heptachlor epoxide	91		114		30-150	22		30	A
Endrin	85		106		30-150	22		30	A
Endrin aldehyde	57		77		30-150	30		30	A
Endrin ketone	80		104		30-150	26		30	A
Dieldrin	102		128		30-150	23		30	A
4,4'-DDE	94		117		30-150	22		30	A
4,4'-DDD	99		120		30-150	19		30	A
4,4'-DDT	92		113		30-150	20		30	A
Endosulfan I	94		118		30-150	23		30	A
Endosulfan II	92		118		30-150	25		30	A
Endosulfan sulfate	70		92		30-150	27		30	A
Methoxychlor	98		123		30-150	23		30	A
cis-Chlordane	91		116		30-150	24		30	A
trans-Chlordane	82		101		30-150	21		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Pesticides by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1029384-2 WG1029384-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		81		30-150	B
Decachlorobiphenyl	79		85		30-150	B
2,4,5,6-Tetrachloro-m-xylene	82		93		30-150	A
Decachlorobiphenyl	69		83		30-150	A

METALS

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	23.8		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Barium, Total	24.3		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Cadmium, Total	1.30		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Chromium, Total	65.0		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Lead, Total	3870		mg/kg	2.15	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Mercury, Total	ND		mg/kg	0.07	--	1	08/04/17 09:40	08/07/17 17:31	EPA 7471B	1,7471B	EA
Selenium, Total	ND		mg/kg	0.860	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Silver, Total	ND		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 08/04/17 06:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	ND		mg/l	0.500	--	1	08/08/17 16:45	08/09/17 15:11	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	14.2		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Barium, Total	30.4		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Cadmium, Total	1.11		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Chromium, Total	36.1		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Lead, Total	232		mg/kg	2.13	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Mercury, Total	ND		mg/kg	0.07	--	1	08/04/17 09:40	08/07/17 17:33	EPA 7471B	1,7471B	EA
Selenium, Total	ND		mg/kg	0.852	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Silver, Total	ND		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 97%

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	11.4		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Barium, Total	18.3		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Cadmium, Total	0.594		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Chromium, Total	72.2		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Lead, Total	858		mg/kg	2.05	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Mercury, Total	ND		mg/kg	0.07	--	1	08/04/17 09:40	08/07/17 17:34	EPA 7471B	1,7471B	EA
Selenium, Total	ND		mg/kg	0.820	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Silver, Total	ND		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 98%

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.3		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Barium, Total	22.5		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Cadmium, Total	0.716		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Chromium, Total	101		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Lead, Total	1040		mg/kg	1.96	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Mercury, Total	ND		mg/kg	0.07	--	1	08/04/17 09:40	08/07/17 17:36	EPA 7471B	1,7471B	EA
Selenium, Total	ND		mg/kg	0.783	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Silver, Total	ND		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1028814-1										
Mercury, Total	ND		mg/kg	0.08	--	1	08/04/17 09:40	08/07/17 17:15	1,7471B	EA

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1029664-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Barium, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Cadmium, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Chromium, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Lead, Total	ND		mg/kg	2.00	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Selenium, Total	ND		mg/kg	0.800	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Silver, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 02 Batch: WG1029990-1										
Lead, TCLP	ND		mg/l	0.500	--	1	08/08/17 16:45	08/09/17 14:42	1,6010C	PS

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 08/04/17 06:09

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1028814-2 SRM Lot Number: D093-540								
Mercury, Total	98		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1029664-2 SRM Lot Number: D093-540								
Arsenic, Total	102		-		70-130	-		
Barium, Total	90		-		83-117	-		
Cadmium, Total	90		-		83-117	-		
Chromium, Total	89		-		80-120	-		
Lead, Total	88		-		82-117	-		
Selenium, Total	100		-		78-122	-		
Silver, Total	91		-		76-124	-		
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02 Batch: WG1029990-2								
Lead, TCLP	94		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1028814-3 QC Sample: L1726817-05 Client ID: MS Sample												
Mercury, Total	ND	0.176	0.22	**125**	Q	-	-		80-120	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1029664-3 QC Sample: L1727114-07 Client ID: MS Sample												
Arsenic, Total	5.76	10.6	15.7	94		-	-		75-125	-		20
Barium, Total	60.6	176	208	84		-	-		75-125	-		20
Cadmium, Total	0.678	4.48	4.34	82		-	-		75-125	-		20
Chromium, Total	8.16	17.6	22.4	81		-	-		75-125	-		20
Lead, Total	24.9	44.8	59.8	78		-	-		75-125	-		20
Selenium, Total	ND	10.6	9.80	93		-	-		75-125	-		20
Silver, Total	ND	26.4	22.7	86		-	-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1029990-3 QC Sample: L1726878-01 Client ID: MS Sample												
Lead, TCLP	ND	5.1	4.86	95		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1028814-4 QC Sample: L1726817-05 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1029664-4 QC Sample: L1727114-07 Client ID: DUP Sample						
Arsenic, Total	5.76	6.67	mg/kg	15		20
Barium, Total	60.6	64.2	mg/kg	6		20
Cadmium, Total	0.678	0.778	mg/kg	14		20
Chromium, Total	8.16	8.97	mg/kg	9		20
Lead, Total	24.9	31.3	mg/kg	**23**	Q	20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1029990-4 QC Sample: L1726878-01 Client ID: DUP Sample						
Lead, TCLP	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Dry Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/07/17 18:43	1,1030	JC

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Damp Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/08/17 01:00	1,1030	SB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Damp Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/08/17 01:00	1,1030	SB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Damp Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/08/17 01:00	1,1030	SB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.7		%	0.100	NA	1	-	08/04/17 13:38	121,2540G	RI
pH (H)	7.2		SU	-	NA	1	-	08/03/17 22:34	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:29	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:38	1,7.3	TL

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.4		%	0.100	NA	1	-	08/04/17 13:38	121,2540G	RI
pH (H)	7.0		SU	-	NA	1	-	08/03/17 22:34	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:29	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:38	1,7.3	TL

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.1		%	0.100	NA	1	-	08/04/17 13:38	121,2540G	RI
pH (H)	6.8		SU	-	NA	1	-	08/03/17 22:34	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:29	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:38	1,7.3	TL

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.6		%	0.100	NA	1	-	08/04/17 13:38	121,2540G	RI
pH (H)	7.2		SU	-	NA	1	-	08/03/17 22:34	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:29	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:38	1,7.3	TL

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1029656-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:36	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1029659-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:28	1,7.3	TL

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1028741-1								
pH	101		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1029656-2								
Sulfide, Reactive	79		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1029659-2								
Cyanide, Reactive	85		-		30-125	-		40

Lab Duplicate Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1028741-2 QC Sample: L1726818-11 Client ID: DUP Sample						
pH	7.2	7.4	SU	3		5
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1028970-1 QC Sample: L1726906-02 Client ID: DUP Sample						
Solids, Total	95.2	95.3	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1029656-3 QC Sample: L1726925-04 Client ID: WC4						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1029659-3 QC Sample: L1726925-04 Client ID: WC4						
Cyanide, Reactive	ND	ND	mg/kg	NC		40

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726925-01A	Vial MeOH preserved	A	NA		4.8	Y	Absent		8260HLW-NH(14)
L1726925-01B	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-01C	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1726925-01E	Plastic 2oz unpreserved for TS	A	NA		4.8	Y	Absent		TS(7)
L1726925-01F	Glass 500ml/16oz unpreserved	A	NA		4.8	Y	Absent		8270TCL(14),IGNIT-1030(14),REACTS(14),PCB-8082(14),PH-9045(1),PEST-8081(14),HERB-8151(14),REACTCN(14)
L1726925-02A	Vial MeOH preserved	A	NA		4.8	Y	Absent		8260HLW-NH(14)
L1726925-02B	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-02C	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1726925-02E	Plastic 2oz unpreserved for TS	A	NA		4.8	Y	Absent		TS(7)
L1726925-02F	Glass 500ml/16oz unpreserved	A	NA		4.8	Y	Absent		8270TCL(14),IGNIT-1030(14),REACTS(14),PH-9045(1),PEST-8081(14),HERB-8151(14),REACTCN(14)
L1726925-02X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.8	Y	Absent		PB-CI(180)
L1726925-02X9	Tumble Vessel	A	NA		4.8	Y	Absent		-
L1726925-03A	Vial MeOH preserved	A	NA		4.8	Y	Absent		8260HLW-NH(14)
L1726925-03B	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-03C	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)

*Values in parentheses indicate holding time in days

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726925-03E	Glass 60ml unpreserved split	A	NA		4.8	Y	Absent		TS(7)
L1726925-03F	Glass 500ml/16oz unpreserved	A	NA		4.8	Y	Absent		8270TCL(14),IGNIT-1030(14),REACTS(14),PH-9045(1),PEST-8081(14),HERB-8151(14),REACTCN(14)
L1726925-04A	Vial MeOH preserved	A	NA		4.8	Y	Absent		8260HLW-NH(14)
L1726925-04B	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-04C	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-04D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1726925-04E	Glass 60ml unpreserved split	A	NA		4.8	Y	Absent		TS(7)
L1726925-04F	Glass 500ml/16oz unpreserved	A	NA		4.8	Y	Absent		8270TCL(14),IGNIT-1030(14),REACTS(14),PH-9045(1),PEST-8081(14),HERB-8151(14),REACTCN(14)

*Values in parentheses indicate holding time in days

Project Name:	OSPREY LANDING	**Lab Number:**	L1726925
Project Number:	171.05010	**Report Date:**	08/10/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	OSPREY LANDING	**Lab Number:**	L1726925
Project Number:	171.05010	**Report Date:**	08/10/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
Mid Class Chemistry
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220
320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 08/03/17

ALPHA Job #: L1726925

Client Information

Client: Ransom Consulting
Address: 112 Corporate Dr
Portsmouth NH
Phone: 603 436-1490
Email: jay.johnnett@ransomenv.com

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth NH
Project #: 171.05010
Project Manager: Jay Johnnett
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☑ Same as Client info PO #: 10258

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☑ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☒ Other State /Fed Program NHDES Criteria

Additional Project Information:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☑ 8260 ☐ 624 ☐ 524.2	SVOC: ☒ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☒ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☒ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Pesticides Herbicides Reactive Cyanide Sulfide Ignitability (Flashpoint) pH	SAMPLE INFO Filtration ☐ Field ☐ Lab to do Preservation ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
26925-01	WC1	8/3/17	9:30	S	JPJ	X	X	X			X		X	X X X X			6
02	WC2	8/3/17	9:40	S	JPJ	X	X	X			X		X	X X X X			6
03	WC3	8/3/17	9:50	S	JPJ	X	X	X			X		X	X X X X			5
04	WC4	8/3/17	10:00	S	JPJ	X	X	X			X		X	X X X X			5
Container Type						V	A	A		A			A	A A A A			
Preservative						F/O	A	A		A			A	A A A A			

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	8/3/17 13:40	Jessica Wagner AAI	8/3/17 1340
Jessica Wagner AAI	8/3/17	AAI	8-3-17 14:35
	8-3-17 17:40		8/3/17 1740

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ATTACHMENT B

September 5, 2017 Remedial Action Plan &
November 28, 2017 Supplemental Subsurface Investigation

Remedial Implementation Work Contract Documents and Specifications
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

DES Waste Management Division
29 Hazen Drive; PO Box 95
Concord, NH 03302-0095

REMEDIAL ACTION PLAN

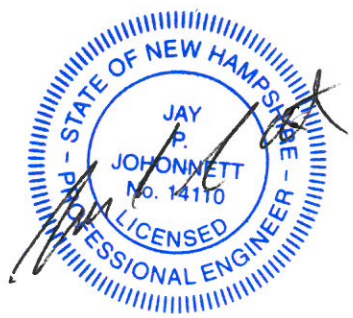
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

NH DES Site #: 201705037
Project Type:
Project Number: 0037896

Prepared For:

City of Portsmouth
Department of Public Works
1 Junkins Avenue
Portsmouth, New Hampshire

PE/PG Stamp:



Prepared By:

Ransom Consulting, Inc.
Pease International Tradeport
112 Corporate Drive
Portsmouth, NH 03801
603.436.1490

Jay P. Johonnett, P.E.
jay.johonnett@ransomenv.com

September 5, 2017

REMEDIAL ACTION PLAN
OSPREY LANDING WATER TANK SITE
STAYSAIL WAY
PORTSMOUTH, NEW HAMPSHIRE

Prepared for:

City of Portsmouth, Department of Public Works
1 Junkins Avenue
Portsmouth, New Hampshire

Prepared by:

Ransom Consulting, Inc.
Pease International Tradeport
112 Corporate Drive
Portsmouth, New Hampshire 03801
603.436.1490

Project 171.05010
September 5, 2017

Jay P. Johonnett, P.E.
Project Engineer

Steven F. Rickerich, P.G.
Vice President

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 INTRODUCTION

Ransom Consulting, Inc. (Ransom) has completed this presumptive-remedy Remedial Action Plan (RAP) to address lead-impacted soil at the City of Portsmouth (City) parcel associated with a former municipal water tank, herein called the Osprey Landing Water Tank site (the Site) and immediately adjoining lawn areas, scrub area, and woodland area off of Staysail Way in Portsmouth, New Hampshire. Figure 1 shows the location of the Site on a U.S. Geological Survey topographic quadrangle map.

The former tank, and a 65-foot by 60-foot area of land encompassing the footprint of the tank is owned by the City of Portsmouth (the Site). The tank was dismantled and removed in the fall of 2016. The Site is currently vacant.

Tighe & Bond conducted a preliminary investigation of soil conditions at the Site for the City in the spring of 2016 prior to removal of the water tank (attached as Appendix A). Tighe & Bond's investigation indicated that shallow Site soils had been impacted by lead, presumably from paint on the former water tank. In May 2017, Ransom prepared and submitted a scope of work to the New Hampshire Department of Environmental Services (NH DES) on behalf of the City, outlining the proposed additional investigation activities and the stating the intent to prepare a presumptive-remedy RAP, as well as the City's intent to implement the RAP in 2017. NH DES indicated in email that a formal response to the scope of work and RAP would not likely be provided within the proposed timeframe and that the work could proceed as allowed under Env-Or 606.14, Corrective Action Prior to RAP Approval.

Ransom has prepared this presumptive-remedy RAP to provide a summary of the environmental conditions at the Site and to evaluate a pre-selected remedial action alternative (soil excavation and removal) for remediation of lead-impacted soils, and the removal and/or on-site management of suspect arsenic-impacted soils at the Site. This RAP consists of:

1. A summary of previous findings and recommendations for Site remediation, including soil quality summary tables;

2. A description of the extent and distribution of contamination; and

3. Remedial objectives and performance standards.

2.0 SITE DESCRIPTION

The approximate 0.09-acre Site property is identified by the City of Portsmouth Tax Assessor's Office as Map 218 Lot 002-0999, with a street address of 26 Staysail Way. The Site is located in a residential condominium neighborhood in Portsmouth, New Hampshire. The remedial actions described herein extend onto portions of the abutting property identified by the City of Portsmouth Tax Assessor's Office as owned by Inishmaan Associates Limited Partnership (operated as the Spinnaker Point Condominiums complex). The Site is the former location of a municipal water supply tank.

2.1 Site and Vicinity

The Site is located at the top of a hill abutted by mature primarily pine forest to the north and east, and condominium buildings and a paved parking area and multi-car garage to the west and a residential yard to the south. An old apple tree, still bearing fruit, remains at the northwest corner of the Site area clearing, and based on its age may indicate use of the knoll as a small orchard prior to water tank installation. In addition to the physical presence of the old apple tree, orchard land use may further be supported by a mapped dirt road to the knoll as shown on a 1942 historical topographic map; however, the pine forest was almost certainly present round the knoll throughout this time period. The Site is accessed from Staysail Way, through the Spinnaker Point Condominiums complex (Figure 2). Access to the water tank property was previously protected with a chain-link fence installed proximate to the City lot boundary, which was removed during the tank decommissioning in the fall of 2016. Following the removal of the water tank, temporary chain-link construction fencing encompassing an area slightly larger than the previous fenced area was installed and posted as a restricted-access area and has been in-place to date. Previously disturbed soils to the west of the Site that slope down to the parking area were stabilized with an erosion control mat (hay and nylon mesh), grasses and weeds, and the base of the slope at the parking lot is toed with erosion control waddles. Disturbed soils to the south of the Site have been mulched with hay. Soil to the north and west of the Site are covered with leaves, pine needles and weeds, including poison ivy along the edge of the pine forest. Historic documents reviewed indicate that the water tank was installed between 1942 and 1952, and the tank is inferred to have been under the ownership and control of the United States Air Force during development of the Wentworth Acres housing development (the Site neighborhood) around the same time. The City of Portsmouth took ownership of the water tank and Site parcel from the Air Force, although no specific date references or transfer documentation were identified. According to City personnel, that tank was aqua blue under the ownership of the City and the tank was not repainted under the City's ownership. The Site vicinity has historically been used for residential housing since it was first developed in the mid- to late-1940s.

2.2 Previous Environmental Investigations

Prior to dismantling and removing the water tank in the fall of 2016, the City hired Tighe & Bond to conduct an assessment of soil conditions at the Site. In May 2016, Tighe & Bond conducted soil sampling activities to assess the Site soils for potential impacts. A combination of field X-Ray Fluorescence (XRF) screening and laboratory testing was conducted to assess for the presence of metals in Site soils. Ransom was provided the summary table and figure prepared by Tighe & Bond, presenting the results of the soil sampling activities, which are included in Appendix A. In addition, as part of the tank demolition preparation, a sample of the water tank exterior paint (aqua blue in color) was collected and analyzed for the presence of polychlorinated biphenyls (PCBs); none were detected. Ransom understands that a final report of Tighe & Bond's soil sampling activities has not been prepared. A summary of Tighe & Bond's soil sampling results is provided as follows.

Soil sampling was generally conducted at three-inch depth intervals from ground surface to depths up to 12 inches below grade. Deeper soil sampling (up to 24 inches) was conducted at three locations. Tighe & Bond's investigation activities documented the presence of lead above NH DES Env-Or 600 Soil Remediation Standards (SRSs, 400 milligrams per kilogram (mg/kg) for lead) in soils beneath and adjacent to the water tank. The source of the lead is likely paint from the water tank. Arsenic was also detected in Site soils at concentrations above the NH DES arsenic SRS (11 mg/kg). Slightly elevated total chromium concentrations (ranging from 102 to 301 mg/kg for the four highest detected concentrations) was detected in the soil samples with the four highest lead concentrations (1,370 to 7,630 mg/kg). Although the laboratory analyses did not include speciation for hexavalent chromium, exceedances of the trivalent chromium SRS (1,000 mg/kg) are not supported for any of the results and exceedance of the hexavalent chromium SRS (130 mg/kg) are only possible for two sample locations. All of these sample locations easily exceed the lead SRS and are thus targeted for remediation/removal. No other Resource Conservation and Recovery Act metals were detected in Site soils at concentrations exceeding or approaching NH DES SRSs. No detectable concentrations of PCBs were documented in paint samples collected from the structure.

Laboratory analyses and field XRF screening detected the presence of lead at concentrations exceeding SRSs in near-surface soil samples to depths of up to 12 inches immediately beneath the tank, and at lesser depths away from the tank. Laboratory analyses and field XRF screening detected lead at concentrations up to 7,630 mg/kg and 4,302 mg/kg, respectively. In most instances, the highest lead concentrations were in the shallowest soil samples. Laboratory analyses detected arsenic in Site soils at concentrations ranging from 5.12 mg/kg to 32 mg/kg. The limited data available suggests that Site soil arsenic concentrations may increase with depth below ground surface in some locations. It is not surprising, then, that the correlation of the arsenic to the lead laboratory data show no obvious relationship ($R^2 = 0.29$ for a best-fit linear regression) between lead and arsenic. This raises the question as to whether the arsenic, in part, may be related to another source such as naturally occurring arsenic or perhaps arsenic used as a pesticide if the knoll was in fact an orchard for a period of time before the water tank was constructed, or an herbicide in later years to control vegetation around the base of the tank.

Field screening data outside of the fenced-in tank area were limited to four radial transects away from the tank; therefore, the information of areal distribution (and depth) of impacted soils at distances more than approximately 20 feet outside of the fenced area was limited.

In response to the soil investigation activities conducted by Tighe & Bond, Ransom developed a scope of work outlining additional investigation activities to support preparation of a presumptive-remedy RAP. The scope of work was submitted to NH DES in May 2017. The results of the additional investigation activities are summarized in the following section.

3.0 SUBSURFACE INVESTIGATION

The initial investigation of Site soil quality conducted by Tighe & Bond detected elevated concentrations of lead and arsenic in Site soils. To further characterize the distribution of arsenic and lead in soil at the Site and develop this presumptive-remedy RAP, Ransom conducted a subsurface investigation at the Site in June 2017.

3.1 Field Explorations

On June 2, 2017, Ransom conducted activities to further characterize the extent of arsenic and lead contamination in soil at the Site. Soil sampling was conducted at 41 hand-excavated sampling locations (designated SS1 through SS41). Soil sampling locations were selected with consideration for the sampling locations previously completed by Tighe & Bond. Field sampling and screening were conducted at 3-inch depth intervals from ground surface to depths up to 18 inches below grade. Five of the soil hand borings were advanced to collect soil samples over the depth interval 18 to 24 inches below grade to establish background arsenic soil concentrations. Field XRF screening results were used to select soil samples for confirmatory laboratory analyses. Soil sampling locations are presented on Figure 2.

Site soils were generally observed to consist of silty sand and sub-rounded gravel overlying bedrock. A bedrock outcrop was observed at the southwest end of the Site. Bedrock was observed at sampling locations SS19, SS20, and SS21 at depths as shallow as 3 to 6 inches below ground surface. Sand, presumably imported to backfill former tank footing and piping areas, as well as a former pump and piping system vault, which were removed during demolition, was observed at the base of the former water tank location. Light blue/green paint chips and flakes were observed on the ground surface at the Site which is consistent with the color of the former water tank. Groundwater was not observed during the excavation activities conducted for the Site soil sampling. Given the occurrence of shallow bedrock at the Site, and the elevated topography of the Site relative to the surrounding neighborhood, overburden groundwater is not likely present at the Site and nearby vicinity. (The subject property neighborhood relies on municipal water.)

During sampling activities, a distinctively different soil type was observed in an area 20 to 30 feet northwest of the former tank base, along the tree line. The soil appears to have been pushed/graded in the past along the edge of a sloping area (Figure 2), and may be reworked soils that date back to when the tank was presumably painted aqua blue some time prior to the City taking ownership in the early 1990s. Reddish-orange chips (inferred to be paint) were observed entrained with soils in this area. Several moderate-sized (approximately 10-in diameter) trees have grown up through the soils and a leaf and pine needle organic matt is evident, which suggests no recent disturbance of soils in this area.

During subsequent sampling on August 3, 2017 of in-situ soils for waste characterization purposes, fine-grained trace reddish-orange paint chips were also noted in soils at depth (6 inches below grade) just south of the southern Site fence line.

Based on the field XRF results and the observation of an early generation of reddish-orange paint, eight additional soil samples were selected for arsenic laboratory analyses, where field screening readings indicated possible elevated arsenic concentrations. XRF arsenic readings are susceptible to inference by the presence of lead, which tends to bias measured readings high. The laboratory data is helpful in assessing the value of XRF arsenic data as a real time guidance tool, and if a clear correlation between lead and arsenic is indicated could link the arsenic to that specific paint source.

3.2 Field Soil Screening

Soil samples were collected and screened for the presence of metals in soils by Titan Lead Testing, LLC. (Titan) of Melrose, Massachusetts using a portable Niton XL3t-600 XRF analyzer following U.S. EPA Method 6200 for soil analysis.

3.3 Laboratory Analyses

Soil samples were selected from 31 sampling locations to be analyzed for the presence of lead by U.S. Environmental Protection Agency (U.S. EPA) Method 6010C; 15 samples were analyzed for the presence of arsenic by U.S. EPA Method 6010C. Laboratory analytical testing was performed by Alpha Analytical, Inc. of Westborough, Massachusetts. Soil samples submitted for laboratory analyses were selected based on field screening results in an attempt to correlate XRF-screening results and define clean-up boundaries.

In addition, 10 soil samples comprised of composite samples collected over two or more sampling depth intervals with elevated lead concentrations at individual sampling locations were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) lead by U.S. EPA Method 6010C to evaluate the lateral boundary between soils anticipated to meet versus those that exceed the hazardous characteristic for disposal purposes. Sampling locations were chosen to straddle the approximate 1,000 mg/kg soils iso-concentration line. Laboratory analytical reports are attached as Appendix B.

Composite soil sampling was conducted from four unique areas of the Site for waste characterization analyses:

1. one from the area of graded/placed soils with reddish-orange paint chips and elevated lead concentrations (exceeding TCLP criteria);

2. two from the remaining areas of elevated lead concentrations (exceeding TCLP criteria); and

3. one from the remaining area with lower level lead concentrations (not exceeding TCLP criteria).

Waste characterization sub-samples were collected over planned excavation depth intervals across a grid and at an appropriate frequency for the aerial extent of impact (either four locations or eight locations). Waste characterization laboratory analytical results are attached as Appendix C.

4.0 RESULTS

Field screening and laboratory analytical results for metals are summarized in Table 1. A series of figures are attached in this report to illustrate the distribution of lead and arsenic in Site soils based on our field screening and laboratory results. Figure 3 depicts the distribution of lead of in Site soils. Figure 4 depicts the distribution of arsenic in Site soils.

4.1 Soil Lead Levels

Field screening and laboratory analysis of Site soils during the subsurface investigation included samples from 41 shallow hand borings (127 samples field screened, 31 samples selected for laboratory analyses). Results are summarized below and graphically depicted, along with selected results from the Tighe & Bond work, on Figure 3.

1. Field screening for metals detected lead in the soil samples at concentrations ranging from background levels up to 8,494 mg/kg (Table 1). Of the 127 samples that were field screened, 43 were above the NH DES SRS of 400 mg/kg. 16 of the samples screened were above 1,000 mg/kg for lead. All of the screening values detected above the SRS were in samples collected from the upper 15 inches of soils. Field screening results for XRF analyses are summarized in Table 1.

2. Laboratory analyses of 31 samples detected lead concentrations exceeding the SRS for seven; detected concentrations ranged from 9 to 12,200 mg/kg. The highest concentrations of lead were observed in soils beneath the former tank area, and in an area slightly northwest of the base of the former tank (Figure 2) which is suspected to include a concentration of soils with entrained reddish-orange paint from a generation of tank coating that preceded City ownership. Laboratory analytical results for lead are summarized in Table 1.

3. Laboratory analyses of the 10 soil samples submitted for TLCP lead analysis detected lead in three of the samples at concentrations exceeding the TCLP regulatory level adopted by the NH DES of 5 milligrams per liter (mg/L). The concentrations of lead detected in the TCLP analyses ranged from 0.52 mg/L to 10.3 mg/L, three of the TCLP results were below the laboratory detection limits. The inferred area of soils exceeding the TCLP lead criteria based on data showing TCLP lead concentration less than 5 mg/l is depicted on Figure 5. One additional TCLP lead sample, from location SS15, will be required to constrain the area as shown; however, the lead concentrations at that location are consistent with soil lead concentrations elsewhere on site that meet the TCLP criteria.

4. Based on field screening and laboratory analytical results, elevated concentrations of lead were found to be generally located in the near-surface soils at the base of the former tank, extending out 80 to 100 feet, predominately to the east (consistent with prevailing wind direction west to east), with concentrations declining markedly below approximately 15 inches bgs at the tested locations. Elevated lead was also detected in soils forming a historically graded embankment slightly northwest of the base of the former tank. Laboratory results indicate that lead is present at concentrations that fail the TCLP regulatory level in both the shallow soils at the base of the former tank and the soils located in the pile northwest of the tank base.

5. The statistical relationship between XRF data and laboratory data indicate a reasonable correlation between the data; XRF readings are generally higher that laboratory results by a factor of 1.56 with a R2 ("goodness of fit") factor of 0.77 for the line best describing the regressed data. Given that the chance presence of one or more lead chips in either the screened or laboratory extracted sample is likely to have a significant effect on the screening or laboratory result, the correlation of the field screening instrument to laboratory data is strong.

4.2 Soil Arsenic Levels

Previous investigation activities conducted at the Site by Tighe & Bond detected arsenic at concentrations above the SRS of 11 mg/kg (Appendix A). Ransom field screened 127 soil samples from 41 shallow hand boring locations, and submitted seven soil samples for laboratory analysis for the presence of arsenic during the subsurface investigation. These seven soils were submitted to assess arsenic background concentrations for Site area soils. Eight additional arsenic samples were submitted for laboratory analyses for soil sample locations with elevated arsenic concentrations, based on XRF data. Results are summarized below and graphically depicted on Figure 4:

1. Field screening for metals detected arsenic in the soil samples at concentrations up to 478 mg/kg (Table 1). For some locations, elevated field screening concentrations of arsenic were generally observed to be coincident with soil samples having elevated field screening and laboratory detected concentrations of lead. The highest arsenic XRF readings were co-located with areas of observed reddish-orange paint chips.

2. Soil samples with lead concentrations at or near established New Hampshire background concentrations (51 mg/kg +/-) as measured by field screening and/or laboratory testing, exhibited arsenic concentrations ranging from 13 mg/kg to 28 mg/kg.

3. Seven soil samples (SS23D, SS29A, and SS37 through SS41) were submitted for laboratory analyses from locations anticipated to be outside the limits of impacts from the former water tank paint to evaluate likely background concentrations of arsenic in native Site soils. These samples were collected from depths ranging from approximately 3 to 24 inches below ground, in soils consistent with the native glacial till soils. Arsenic was detected in these soil samples at concentrations ranging from 6.22 mg/kg to 16.1 mg/kg.

4. Eight soils samples (SS4D, SS8B, SS10A, SS14C, SS18B, SS22A, SS28E, and SS31B) having elevated lead and arsenic XRF screening results or elevated XRF arsenic detection limits with adjoining elevated arsenic XRF screening results, were submitted for laboratory analyses to further assess the co-location of lead and arsenic and assess the potential for arsenic to be associated with observed areas of reddish-orange paint in soils. Although the highest laboratory detected concentration of arsenic (68.8 mg/kg) was detected in a sample collected from an area where reddish-orange paint was observed in soils and where elevated lead was detected, no clear correlation could be made between the presence of elevated arsenic concentrations in soils and the presence of reddish-orange paint flakes. Laboratory arsenic analytical results did not correlate strongly to XRF arsenic screening results where elevated concentrations of lead were detected. Furthermore, no good correlation between laboratory arsenic concentrations and laboratory lead concentrations could be made.

4.3 Waste Characterization Laboratory Analytical Results

Laboratory analytical results of soil waste characterization samples collected from the Site detected trace concentrations of volatile organic compounds (VOCs) and pesticides; however, at concentrations that do not exceed SRSs. Polychlorinated biphenyls (PCBs) were not detected above laboratory detection limits. The polycyclic aromatic hydrocarbons (PAHs) benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene were detected in the waste characterization sample (WC-1) collected from the area of graded/placed soils northwest of the tank base at concentrations exceeding NH DES SRSs. Other PAHs were detected in the waste characterization samples; however, at concentrations that do not exceed SRSs.

The highest concentrations of PAHs were detected in the waste characterization sample collected from the area of graded/placed soils northwest of the tank base. The source of the elevated concentrations of PAHs could be from coal slag, potentially used as a sandblast media for tank maintenance.

Low-level pesticides (DDT, DDE, and/or endosulfan), detected at concentrations more than 100 times less than their respective SRSs, were detected in two waste characterization samples (WC-1 and WC-4).

TCLP lead concentrations for the composite waste characterization sample collected from the lesser-impacted area of soils anticipated meet the TCLP lead standard were below laboratory detection limits for TCLP lead.

Chromium was detected in one sample (WC-4) at a concentration (101 mg/kg) above the 20x threshold (100 mg/kg) for the TCLP chromium standard of 5 mg/L. In the absence of other characterization data, this sample would typically require TCLP chromium analyses, despite meeting SRSs for chromium. No additional analysis is required; however, because this sample was collected from an area failing TCLP lead analyses and will be managed based on that result.

5.0 CONCEPTUAL SITE MODEL

The shallow soils at the Site consist predominantly of very dense, grayish-brown, silty fine to medium sand and gravel (native glacial till soils) and localized areas of fine to medium sand (imported to fill foundation excavations) overlying bedrock. A bedrock outcrop was observed at the southwest end of the Site, and bedrock was observed at sampling locations as shallow as 3 to 6 inches below ground surface. Groundwater was not encountered during the soil sampling activities, and is not likely present within the relatively thin overburden soils. The nearest surface water body is the Piscataqua River, located approximately 3,000 feet to the north, which flows from northwest to southeast and is tidal in this section.

5.1 Contaminant Distribution

The field screening and laboratory results of the subsurface investigation indicated that elevated concentrations of lead were found to be generally located in the near-surface soils at the base of the former water tank, extending out 80 to 100 feet predominately to the east (consistent with the likely effects of the prevailing wind direction, west to east), with concentrations declining markedly below approximately 15 inches bgs at the tested locations. Elevated lead was also found in soils in an area of historically graded/placed soils located slightly northwest of the base of the former tank. Laboratory results indicate that lead is present at concentrations that exceed the TCLP regulatory level in both the shallow soils at the base of the former tank and the soils located in the area of the graded/placed soils northwest of the tank base. The distribution of lead concentrations in Site soils, and the inferred boundary where soils have been shown to meet the TCLP criteria, are depicted on Figure 5.

Field XRF screening of Site soils detected elevated concentrations of arsenic, exceeding the SRS of 11 mg/kg. The elevated concentrations of arsenic detected during field screening were observed in samples also containing elevated concentrations of lead. Field screening results are inferred to be biased high in samples with high lead concentrations, and XRF screening is not considered a viable tool for assessing arsenic concentrations in soils with elevated concentrations of lead which diminish the accuracy of the instrument and appears to be of limited value where lead is at lower concentrations. Soil samples with lead concentrations at or near established New Hampshire background concentrations (51 mg/kg +/-) as measured by laboratory testing, exhibited arsenic concentrations ranging from 6.22 mg/kg to 16.1 mg/kg, which Ransom believes is representative of the naturally occurring range of arsenic concentrations in the native Site soils. The distribution of arsenic concentrations in Site soils is depicted on Figure 4.

From the occurrence of elevated lead and arsenic concentrations within relatively shallow Site soils, Ransom infers that the elevated lead concentrations are associated with the historical presence of lead-based paints applied to the exterior surface of the water tank, which is likely also the source of the elevated concentrations of arsenic detected. Downward migration of the lead and arsenic has generally been limited, and lead SRS exceedances were generally not observed at depths greater than 15 inches.

5.2 Potential Sources

Historic documents reviewed indicate that the water tank was installed between 1942 and 1952, and the tank is inferred to have been under the ownership and control of the United States Air Force during development of the Wentworth Acres housing development (the Site neighborhood) around the same time. It is Ransom's understanding that the City of Portsmouth took ownership of the water tank and Site parcel in the early 1990s, although no specific date references or transfer documentation were identified. According to City personnel, that tank was aqua blue under the ownership of the City and the tank was not repainted in under the City's ownership. The Site vicinity has historically been used for residential housing since it was first developed in the mid- to late-1940s.

Historic topographic maps suggest that the Site and vicinity may have been used for agricultural purposes prior to construction of the tank, although the pine forest around the knoll would have been established for at least the past 70 to 100 years (estimated). One old apple tree was noted on the property at the edge of the northwest graded/placed soils area. It is our opinion that the source of the elevated levels of lead, and to some degree arsenic, in the shallow soils at the Site is due to the presence of lead-based paints on the surface of the water tank over approximately 70+/- years. It is likely that lead-based paints were also used on the residential buildings in the vicinity of the tank; however, the nearest buildings are at least 70 feet from the base of the former water tank and sampling results indicate that lead concentrations in shallow soils decrease with distance from the base of the tank.

Lead-based paints applied to the exterior surface of the water tank likely impacted shallow Site soils by flaking, and degrading over an extended period of time. Evidence of aqua blue paint flakes was noted at in shallow/ground surface soils and organic detritus. Reddish-orange paint flakes were noted in soils northwest of the former tank (graded/placed area) and in soils south of the tank. Reddish-orange paint where observed was generally fine grained, degraded and brittle. These fine-grained flakes appeared to have infiltrated into the soils over time, based on their occurrence at depth, rather than at the surface.

Although the highest arsenic concentration is co-located with the most elevated lead concentrations, namely where the placed/graded soils area with reddish-orange paint chips were observed, the generally poor correlation between high arsenic and high lead concentrations (whether in shallow or deep soils, whether reddish-orange paint or aqua-blue paint was noted) present the possibility for multiple sources:

1. Pesticides applied to a possible small orchard;

2. Herbicides applied to control vegetation beneath the tank; and

3. Naturally occurring arsenic as is associated with local Seacoast New Hampshire lithologies (the Merrimack Group) and soils derived from those lithologies.

5.3 Potential Pathways for Contaminant Migration

Mobilization and migration of the detected contaminants present at concentrations above regulatory standards from soils to groundwater and then off-site via groundwater flow has not been confirmed; however, the detected contaminants of concern (primarily lead and arsenic) are not particularly soluble under the conditions observed, as evidenced by rapid decrease in concentration with depth. Our understanding of contaminant distribution supports only shallow impacts to Site soils with downward migration limited to 15 inches below grade as a result of infiltration precipitation. This is further supported by shallow overburden groundwater being absent at the Site. Shallow bedrock was indicated in the southwest corner of the Site and not noted in the areas of higher contaminant concentrations.

Other potential migration pathways for contaminants in soil include physical transport of contaminants adsorbed onto soil particles, and carried in storm water runoff, and dust particles. Although these pathways are possible, they are partially mitigated by a relatively flat ground surface at the base of the tank and established vegetation in the areas immediately surrounding the former tank base, and engineering controls (erosion control mats, loam and seed, hay, and stormwater control wattles placed after tank demo). Based on photographs of Site conditions prior to tank demolition, lawn grass and screening pines adjoined the fenced bounds of the Site which would have mitigated the potential for physical transport.

The contaminants of concern (COCs) for this Site (primarily arsenic and lead) are not volatile at normal ambient temperatures; therefore, migration as a vapor or fume in air or soil vapor is not a consideration.

5.4 Potential Exposure Routes

Potential pathways for human exposure to the identified Site soil contaminants include direct contact with impacted soils either at the ground surface or in soils shallower than approximately 15 inches below grade, and inhalation of airborne soil or dust particles. These exposure routes have been mitigated by the conditions described under 5.3.

6.0 POTENTIAL RECEPTORS

6.1 Water Supply Well Users

Overburden groundwater is not present at the Site and evidence supports very limited downward migration of the COCs. The area is served by the City of Portsmouth public water system; no records of water supply wells were found within 500 feet of the Site. As such, no consumptive use risk for users of groundwater was identified.

6.2 Dwellings and Commercial Buildings Occupants

Occupants of residential dwellings and commercial buildings are potential receptors with respect to indoor air quality. The metals detected in Site soils are not volatile at normal ambient temperatures and pose no vapor intrusion risk.

6.3 Surface Waters

The nearest surface water body is the Piscataqua River, located approximately 3,000 feet north of the Site property. Flat grades and benched slopes for much of the Site area encourage precipitation infiltration. Little evidence of overland flow of stormwater and sediment erosion was observed for unpaved areas. Lead concentrations in surficial soil samples screened for surface soils from the slope between the former tank area western construction fence to the parking lot were below SRS for lead and typical of native background for arsenic, based on typical Seacoast New Hampshire background and Site background. Overburden groundwater is not present at the Site, and evidence of downward migration of arsenic and lead in Site soils appears to be limited to the upper 15 inches of soil. Therefore, the Site COCs poses no increased risk to possible users of river surface water or to aquatic life (fish, epifauna and infauna).

6.4 Human Exposure to Soils

Access to the Site is currently limited by chain-link fencing, signage, and overgrown vegetation. The Site does not currently have a defined use. Arsenic and lead were detected at concentrations above risk-based levels, and therefore some degree of increased risk is inferred for users of the property and adjoining area. The presence of surface vegetation (grasses), erosion control matting, and hay, over the most accessible area of the Site mitigates the potential for frequent or high intensity use exposure to Site soils under this interim, pre-remediation land time period. No indications of area use were observed during Ransom's Site visits (sampling flags were in–place and undisturbed, no footprints or disturbed ground was visible, high grass vegetation was intact and undisturbed; along wooded areas pine needle and leaf vegetation matt and poison ivy was undisturbed, other than where disturbed by fall 2016 tank removal activities (brush clearing, etc.).

This RAP focuses on further controlling potential exposure risks to the concentrations of arsenic and lead in the Site soils.

7.0 DEVELOPMENT OF REMEDIAL OBJECTIVES

7.1 Soil Cleanup Goals

Impacts to Site soils were discussed in Subsection 5.1 of this RAP, and the distribution was shown on Figures 3 and 4. Arsenic and lead were detected at concentrations exceeding their respective NH DES Env Or 600 SRSs of 11 mg/kg and 400 mg/kg.

In general, high arsenic concentrations were very poorly correlated with high lead concentrations which does not support a sole-source associated with paint. Laboratory analyses of soil samples collected from the Site in inferred background locations (no evidence of impacts from lead-based paint) detected arsenic at concentrations ranging from 6.22 mg/kg to 16.1 mg/kg, while field XRF screening results detected arsenic at concentrations ranging from 13 mg/kg to 28 mg/kg in similar background locations. Several lines of evidence also point to some period of agricultural use for the immediate knoll, including: the presence of an old apple tree; historic topographic maps (1942) showing a dirt road to the knoll. Co-located pesticides 4,4-DDT, 4,4-DDE, and endosulfan may have been associated with insect pest control after water tank construction. In addition, arsenicals were used through the 1970s to control vegetation, which is a possible scenario for weed control beneath military infrastructure.

Seacoast New Hampshire soils, particularly immature (unweathered) soils, are known to have anomalously high arsenic concentrations. Shallow (visible outcrop) bedrock indicates the likely presence of immature soils. The native bedrock at and proximal to the Site, which includes lithologies of the eugeosynclinal Merrimack Group, is a probable source of much of the arsenic for soils. Ransom believes the naturally occurring arsenic concentrations in Site soils likely range up to at least approximately 16.1 mg/kg, as supported by laboratory analytical results.

Given the above uncertainty relative to arsenic at this Site Ransom proposes removal of elevated arsenic co-located with lead concentrations above 400 mg/kg. No removal of soils with arsenic at background concentrations (16.1 m/kg) or soils with arsenic that may occur at moderately elevated concentrations at depth or laterally away from the lead soil removal area because of probable historical pesticide or herbicide application is proposed.

The SRSs for lead (400 mg/kg) is to be used as the clean-up criteria in this RAP to define the areal extent of the COCs for soil to be removed.

In addition, one area/location (soils graded northwest of the former tank) was identified with elevated PAHs and is co-located with an area of reddish-orange paint chips and elevated lead concentrations. Attainment of SRSs is proposed for soils with PAHs where concentrations indicated its occurrence as a probable historic waste (likely disposal of coal-slag sand blast media prior to City ownership).

7.2 Evaluation of the Need for Active Remedial Measures

Evaluation of the need for corrective actions is based on the extent of soil contamination at concentrations that exceed the relevant clean-up guidelines, and on the nature of the Site in relation to potential contaminant migration pathways, and human and environmental receptors.

There are no known public water supply wells in the vicinity of the Site that could be impacted by the on-site contaminants.

Visitors to the Site could be directly exposed to contamination present on the ground surface of the Site. Without the occurrence of physical soils disturbance, the generation of dust at the Site (City owned parcel) or Site area (area adjoining the City parcel) is unlikely under current conditions; however, because the Site is in a residential area and soils disturbance or dust generating conditions/activities are never-the-less possible, additional measures to reduce soil contaminants levels are appropriate.

With the exception of the historically graded/placed soils northwest of the former tank, Site area surface soils (i.e. soils outside of the fenced City parcel) lead concentrations generally meet Department of Health and Human Services (DHHS) He-P 1600 Interim Control Measures criteria for play areas (400 mg/kg) and vegetated yards (1,200 mg/kg). The Site area does not have established play areas or pet areas. However, soils within the fenced area do not meet this condition.

Remedial measures are necessary to reduce contaminant exposure risks to acceptable levels for residential-type use scenarios and possible future land uses for the Site the Site area.

7.3 Remedial Action Selection

7.3.1 Identification of Presumptive-Remedy Remedial Action

The objective of the presumptive-remedy remedial action is to abate or mitigate Site soils to reduce or eliminate the potential for human exposure to metals contamination. Excavation and off-site disposal of impacted soils was identified as the preferred remedial alternative. The objective of the presumptive-remedy is to remove soil impacted above the SRS for lead (400 mg/kg) from the Site (as defined on Figures 3 and 4) and co-located soils with both arsenic and PAHs (one area) to mitigate the risk of human exposure and future threats to the environment. The remedial alternative was selected with preference to timeliness of completion and effectiveness at reducing risk.

7.3.2 Design Assumptions

The following design assumptions were made to evaluate the presumptive-remedial approach.

1. Excavation of impacted soils from the area generally beneath the former tank and extending east approximately 80 feet, from ground surface to depths ranging from approximately 3 inches to 16 inches below grade which consists of approximately 16,000 square feet (approximately 420 cubic yards or 585 tons). Excavation limits are to utilize information contained herein as well as real-time field screening results with an XRF analyzer.

2. Confirmatory soil sampling for laboratory analyses for the presence of lead and arsenic at the completion of soil excavation activities at a frequency of 1 sample per every 1,000 square feet (31.5 x 31.5), or approximately 16 to 20 samples.

3. Confirmatory soil sampling for laboratory analyses for the presence of PAHs at the completion of soil excavation activities from the area of grade/placed soils northwest of the tank base where PAHs were detected at concentrations exceeding SRSs, at a frequency of 1 sample per every 1,000 square feet (31.5 x 31.5), or approximately 2 samples from this area.

4. Off-site disposal of the contaminated soils, with soil characterization prior to disposal.

5. Site restoration activities including backfilling excavation areas with imported sand and gravel to approximately the previous Site grades minus 4 inches, and installation of loam and seed.

6. Completion of the remedial activities in the fall of 2017.

7.3.3 Evaluation of Presumptive-Remedy Remedial Action

The "excavation and off-site disposal" presumptive-remedy remedial action has been evaluated using the criteria listed below:

Ability to Meet Remedial Action Objectives (i.e. Overall Protection of Human Health and the Environment and Reduction of Toxicity, Mobility and Volume of Contamination)

The objective of the selected remedial action is to reduce the risk for human exposure and environmental impacts from the COCs. Following completion of the excavation and off-site disposal program, all Site soils exceeding the lead SRS and arsenic background concentrations will be removed from the Site, thereby eliminating the risk for future exposure and environmental impacts, satisfying the remedial action objectives.

Anticipated Clean-up Time

The City of Portsmouth has indicated that prompt implementation and completion of the proposed remedial action is a priority. Following bid solicitation and contractor selection, Ransom anticipates that the implementation activities could be completed in approximately two weeks.

Construction Limitations

Factors that influence constructability include physical Site features, such as buildings, traffic ways, and utilities, as well as subsurface conditions, such as shallow groundwater conditions, deep excavation requirements, or potential obstructions. The completion of the excavation and off-site disposal remedial alternative will pose few construction limitations. The excavation and off-site disposal activities would utilize standard construction techniques, and therefore is technically practical at the Site.

Dust control and techniques designed to minimize off-site dirt tracking will be required. The contractor will be required to excavate to tight excavation depth tolerances (approximately 3-inch increments) to complete the remedial activities, which will require a smooth-edged bucket, skilled operator, and proper grade control. Removal of several trees may be necessary for the northwestern limits of the excavation. Access to the Site is provided by slightly narrow residential roads. Truck access routes and staging areas will need to be coordinated carefully. Work hours are anticipated to be restricted to 8 AM to 5 PM.

Operation Complexity

This criterion refers to factors such as monitoring, testing, and maintenance that must be performed during implementation/operation of the remedial alternative. Dust control activities will be required. Site worker and public exposure to dust monitoring will be required. Following completion of the excavation and off-site disposal activities, no additional maintenance or operational activities will be required. No future property use limitations or monitoring are anticipated.

Cost

Ransom prepared an estimate of costs to complete the presumptive-remedy remedial actions which was previously provided to the City of Portsmouth. City of Portsmouth officials indicated that the estimated costs were within the budgeted allowance for completion of this project. Since this presumptive-remedy achieves the objectives presented herein, and is economically feasible for the City of Portsmouth to complete, cost estimates are not provided in this RAP.

8.0 DESIGN CONSIDERATIONS

The proposed remedial action alternative is designed to remediate the near-surface, on-site soils with documented impacts due to lead, PAHs, and co-located arsenic at concentrations greater than the SRS, and as well as soils with greater than naturally-occurring concentrations for arsenic without the intent of chasing soils with probable arsenical herbicides/pesticides applied as intended outside of the remediation area. The principal components of this presumptive-remedy consist of excavation and transportation of impacted soils.

The proposed limits of excavation were delineated using the field screening and laboratory analytical results from Tighe & Bond's May 2016 investigation activities and Ransom's June 2017 subsurface investigation activities. The proposed soil excavation area includes approximately 16,000 ft^2, excavating to depths ranging from approximately 3 inches to 16 inches below grade (Figure 5). Specific areas and soil depth intervals of the herein defined contaminated soils will be designated to be removed and transported off-site for proper disposal at a facility permitted to receive these materials, requiring management and characterization per Env-Or 611. All soils to be removed from the Site will be pre-characterized in accordance with Env-Or 611 and the receiving facility, and are intended to be live-loaded for off-site disposal. On-site stockpiling of impacted soils is not proposed. Real-time field XRF screening (for lead based on good correlation data with laboratory results as documented herein) and confirmatory laboratory endpoint sampling will be conducted to document achievement of the soil cleanup goals, and these results will control the final limits of the excavation.

Following completion of the remedial soil excavation and off-site disposal activities, the Site will be restored by backfilling excavation areas with imported sand and gravel to approximately the previous Site grades, minus 4 inches, and the installation of minimum of 4 inches of loam and seed to revegetate the construction area.

9.0 COMPLIANCE SCHEDULE AND REPORTING

9.1 Regulations, Statutes and Permit

The primary regulatory requirements for remediation of this Site are contained in New Hampshire administrative rules Env-Or 600, Contaminated Site Management and Federal stormwater regulations under the national NPDES program. The project will not impact known wetlands. Because the extent of disturbance associated with the proposed remedial alternative is estimated at approximately 16,000 square feet, and is not within the Protected Shoreland, an Alteration of Terrain permit is not required. The City will require that the remediation contractor provide documentation to substantiate that all local, state and federal permits for Site work have been obtained prior to implementing the work.

9.2 Completion Reporting

A remedial action implementation report will be prepared by Ransom upon completion of the soil excavation and off-site disposal activities.

10.0 LIMITATIONS

This RAP was prepared exclusively for the use of the City of Portsmouth, in accordance with our approved scope of work fully executed on April 25, 2017. This RAP is based upon the information available to Ransom as of the date of this report, and Ransom expressly disclaims any obligation or undertaking to update or modify the opinions and recommendations as a consequence of any future changes in the available information. This report and the opinions and recommendations embodied herein are subject to the Ransom *Terms and Conditions*, including limitations pertaining to estimates of remedial costs. The City of Portsmouth recognizes that the services provided by Ransom and the contents of this report are solely for the benefit of the Client and its heirs, successors and permitted assigns whose reliance thereon is not independent of Client's. The contents of this report are not intended to be quoted or otherwise referenced to, nor furnished to any other person, and no other person shall be entitled to rely hereon, without Ransom's prior written consent.

TABLE 1: FIELD SCREENING AND LABORATORY METALS RESULTS

Remedial Action Plan
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

Sample Identification	Depth (inches)	Date	Field Screening Results (ppm)		Laboratory Analytical Results		
			Arsenic	Lead	Total Arsenic (mg/kg)	Total Lead (mg/kg)	TCLP Lead (mg/L)
1A	0-3	6/2/2017	**30**	319	-	-	-
1B	3-6	6/2/2017	ND (28)	316	-	-	-
1C	6-9	6/2/2017	ND (27)	326	-	132	-
1D	9-12	6/2/2017	ND (19)	116	-	-	-
1E	12-15	6/2/2017	ND (21)	175	-	-	-
2A	0-3	6/2/2017	ND (37)	**615**	-	-	-
2B	3-6	6/2/2017	**30**	263	-	-	-
2C	6-9	6/2/2017	ND (43)	**878**	-	-	-
2D	9-12	6/2/2017	ND (41)	**619**	-	-	-
3A	0-3	6/2/2017	ND (21)	268	-	-	-
3B	3-6	6/2/2017	ND (20)	181	-	135	-
4A	0-3	6/2/2017	**66**	**1684**	-	-	**9**
4B	3-6	6/2/2017	ND (63)	**1782**	-	-	
4C	6-9	6/2/2017	ND (64)	**1664**	-	-	
4D	9-12	6/2/2017	ND (68)	**2019**	7.09	**2020**	
4E	12-15	6/2/2017	ND (45)	**862**	-	-	-
5A	0-3	6/2/2017	ND (33)	**533**	-	-	0.52
5B	3-6	6/2/2017	ND (31)	370	-	-	
5C	6-9	6/2/2017	ND (12)	24	-	-	-
5D	9-12	6/2/2017	ND (12)	35	-	78	-
6A	0-3	6/2/2017	ND (33)	**459**	-	-	-
6B	3-6	6/2/2017	ND (28)	**402**	-	**479**	**-**
6C	6-9	6/2/2017	ND (21)	105	-	-	-
7A	0-3	6/2/2017	ND (11)	ND (13)	-	-	-
7B	3-6	6/2/2017	ND (15)	50	-	-	-
8A	0-3	6/2/2017	**47**	**609**	-	-	0.545
8B	3-6	6/2/2017	ND (44)	**718**	**22.3**	293	
8C	6-9	6/2/2017	**40**	95	-	-	**-**
8D	9-12	6/2/2017	**33**	ND (13)	-	-	**-**
8E	12-15	6/2/2017	**56**	114	-	-	**-**
9A	0-3	6/2/2017	ND (22)	217	-	300	**-**
9B	3-6	6/2/2017	ND (21)	166	-	-	**-**
10A	0-3	6/2/2017	**40**	**440**	**15.2**	332	0.628
10B	3-6	6/2/2017	ND (25)	235	-	-	
10C	6-9	6/2/2017	**15**	34	-	-	**-**
10D	9-12	6/2/2017	**13**	ND (11)	-	-	**-**
10E	12-15	6/2/2017	**15**	ND (22)	-	-	**-**
11A	0-3	6/2/2017	ND (33)	**428**	-	-	**-**
11B	3-6	6/2/2017	ND (38)	**599**	-	-	**-**
11C	6-9	6/2/2017	ND (17)	84	-	-	**-**
11D	9-12	6/2/2017	ND (10)	16	-	-	**-**
11E	12-15	6/2/2017	ND (10)	ND (12)	-	-	-
12A	0-3	6/2/2017	ND (61)	**1663**	-	-	-
12B	3-6	6/2/2017	**42**	**502**	-	-	**-**
12C	6-9	6/2/2017	**17**	16	-	-	-

TABLE 1: FIELD SCREENING AND LABORATORY METALS RESULTS

Remedial Action Plan
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

Sample Identification	Depth (inches)	Date	Field Screening Results (ppm)		Laboratory Analytical Results		
			Arsenic	Lead	Total Arsenic (mg/kg)	Total Lead (mg/kg)	TCLP Lead (mg/L)
13A	0-3	6/2/2017	**17**	37	-	-	-
13B	3-6	6/2/2017	**26**	39	-	-	**-**
13C	6-9	6/2/2017	ND (22)	180	-	-	**-**
13D	9-12	6/2/2017	**41**	**597**	-	-	**-**
13E	12-15	6/2/2017	**43**	355	-	-	-
14A	0-3	6/2/2017	ND (36)	**593**	-	-	-
14B	3-6	6/2/2017	**46**	239	-	-	**-**
14C	6-9	6/2/2017	**67**	196	**19.9**	144	**-**
14D	9-12	6/2/2017	**40**	130	-	-	-
15A	0-3	6/2/2017	ND (24)	333	-	-	-
15B	3-6	6/2/2017	ND (26)	280	-	**464**	-
16A	0-3	6/2/2017	**37**	291	-	-	-
16B	3-6	6/2/2017	ND (14)	63	-	76.1	-
17A	0-3	6/2/2017	ND (26)	233	-	-	ND (0.5)
17B	3-6	6/2/2017	**40**	277	-	-	
17C	6-9	6/2/2017	ND (31)	**434**	-	368	
17D	9-12	6/2/2017	ND (21)	172	-	-	-
18A	0-3	6/2/2017	**109**	**1092**	-	-	-
18B	3-6	6/2/2017	**68**	**440**	**36.4**	296	**-**
18C	6-9	6/2/2017	**72**	121	-	-	**-**
18D	9-12	6/2/2017	**25**	44	-	-	-
19A	0-3	6/2/2017	ND (31)	**405**	-	-	-
20A	0-3	6/2/2017	**15**	75	-	-	
20B	3-6	6/2/2017	ND (16)	95	-	-	-
21A	0-3	6/2/2017	**21**	24	-	-	-
21B	3-6	6/2/2017	ND (14)	58	-	36.6	-
22A	0-3	6/2/2017	ND (43)	**895**	**15.5**	**565**	2.06
22B	3-6	6/2/2017	**45**	246	-	-	
22C	6-9	6/2/2017	ND (45)	**750**	-	-	
22D	9-12	6/2/2017	ND (45)	**779**	-	-	
22E	12-15	6/2/2017	**50**	378	-	-	-
23A	0-3	6/2/2017	ND (12)	26	-	-	-
23B	3-6	6/2/2017	ND (14)	48	-	35.1	**-**
23C	6-9	6/2/2017	**20**	62	-	-	**-**
23D	9-12	6/2/2017	ND (15)	58	**13.2**	42	-
24A	0-3	6/2/2017	ND (21)	193	-	191	-
24B	3-6	6/2/2017	ND (15)	62	-	-	-
25A	0-3	6/2/2017	**19**	99	-	-	
25B	3-6	6/2/2017	ND (20)	133	-	-	**-**
25C	6-9	6/2/2017	**28**	22	-	-	-
26A	0-3	6/2/2017	ND (9)	ND (12)	-	-	-
26B	3-6	6/2/2017	ND (24)	233	-	231	ND (0.5)
26C	6-9	6/2/2017	ND (17)	110	-	-	
27A	0-3	6/2/2017	ND (61)	**1552**	-	393	-
27B	3-6	6/2/2017	**66**	**1061**	-	-	**-**
27C	6-9	6/2/2017	ND (17)	96	-	-	**-**
27D	9-12	6/2/2017	**32**	102	-	-	**-**
27E	12-15	6/2/2017	**13**	ND (14)	-	-	-

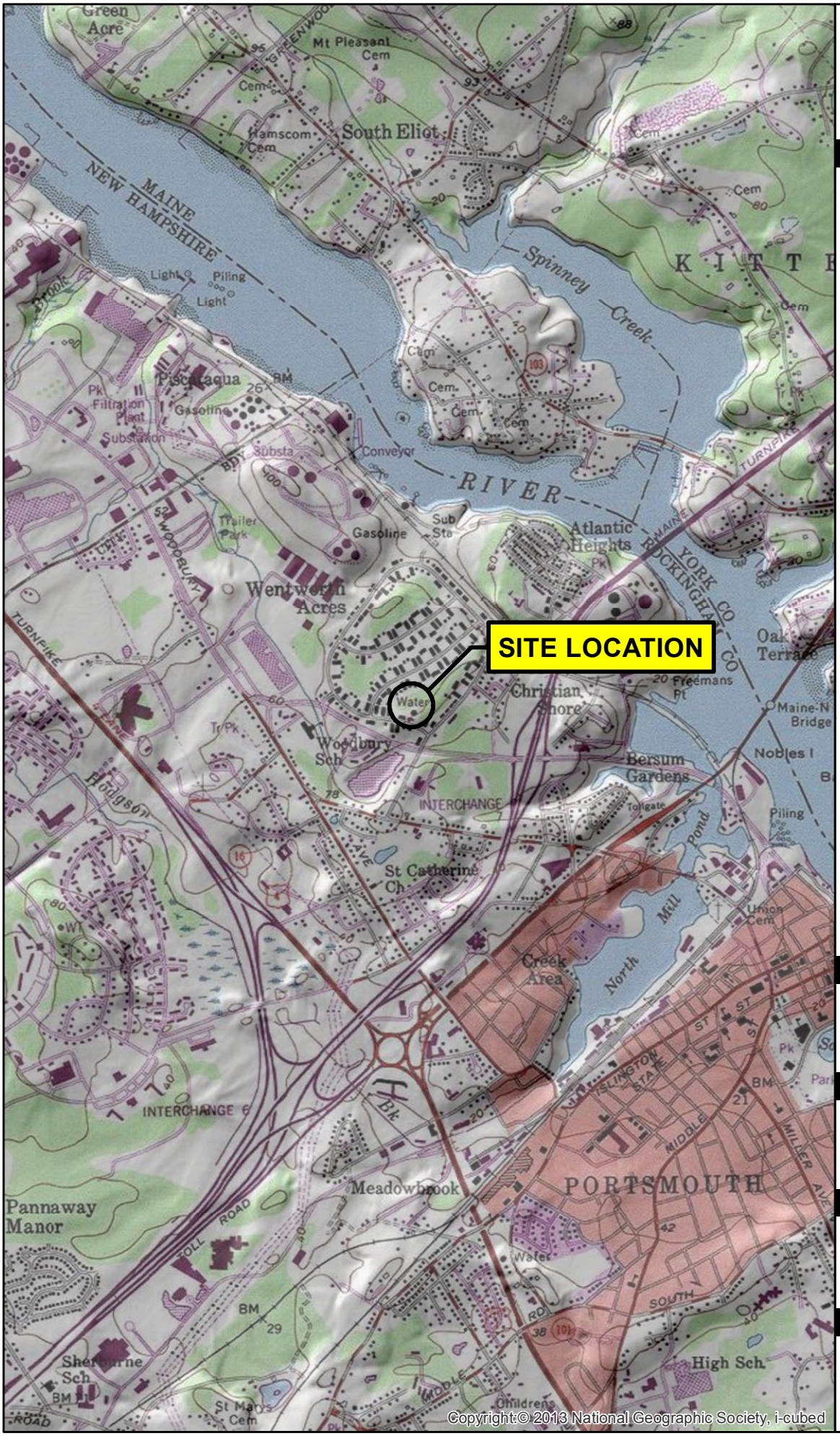
TABLE 1: FIELD SCREENING AND LABORATORY METALS RESULTS

Remedial Action Plan
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

Sample Identification	Depth (inches)	Date	Field Screening Results (ppm)		Laboratory Analytical Results		
			Arsenic	Lead	Total Arsenic (mg/kg)	Total Lead (mg/kg)	TCLP Lead (mg/L)
28A	0-3	6/2/2017	ND (34)	**544**	-	-	
28B	3-6	6/2/2017	ND (62)	**1703**	-	-	
28C	6-9	6/2/2017	ND (59)	**1466**	-	-	**5.32**
28D	9-12	6/2/2017	**86**	**1391**	-	-	
28E	12-15	6/2/2017	ND (93)	**3513**	**12.9**	**1940**	
28F	15-18	6/2/2017	**51**	295	-	-	-
29A	0-3	6/2/2017	ND (8)	ND (9)	7.67	29.7	
29B	3-6	6/2/2017	ND (15)	52	-	37.2	-
30A	0-3	6/2/2017	ND (32)	**418**	-	-	-
30B	3-6	6/2/2017	ND (16)	75	-	-	**-**
30C	6-9	6/2/2017	ND (23)	204	-	-	**-**
30D	9-12	6/2/2017	ND (13)	38	-	-	**-**
30E	12-15	6/2/2017	**16**	37	-	-	-
31A	0-3	6/2/2017	**233**	**7273**	-	-	
31B	3-6	6/2/2017	**478**	**8494**	**68.8**	**12200**	**10.3**
31C	6-9	6/2/2017	**98**	**1353**	-	-	
31D	9-12	6/2/2017	**84**	**884**	-	-	
31E	12-15	6/2/2017	**22**	49	-	-	-
32A	0-3	6/2/2017	**17**	68	-	-	
32B	3-6	6/2/2017	**15**	37	-	-	**-**
32C	6-9	6/2/2017	**13**	24	-	-	-
33A	0-3	6/2/2017	ND (39)	**684**	-	-	
33B	3-6	6/2/2017	ND (31)	352	-	-	ND (0.5)
33C	6-9	6/2/2017	**39**	368	-	-	
34A	0-3	6/2/2017	ND (35)	**595**	-	**1110**	**-**
34B	3-6	6/2/2017	**24**	202	-	-	**-**
34C	6-9	6/2/2017	ND (15)	59	-	65	-
35A	0-3	6/2/2017	ND (55)	**1253**	-	-	-
36A	0-3	6/2/2017	ND (52)	**1168**	-	-	-
37 -- 18" TO 24"	18-24	6/2/2017	ND (12)	22	6.22	23.6	-
38 -- 18" TO 22"	18-22	6/2/2017	**15**	35	**16.1**	27	-
39 -- 18" TO 24"	18-24	6/2/2017	ND (10)	ND (12)	8.82	14.9	-
40 -- 18" TO 22"	18-22	6/2/2017	ND (11)	30	**13.6**	27.5	-
41 -- 18" TO 24"	18-24	6/2/2017	ND (11)	20	8.98	9	-
NH DES SOIL REMEDIATION STANDARDS			11	400	11	400	NA
NH DES IDENTIFIED BACKGROUND LEVELS			11	51	11	51	NA
ENV-HW 400 TCLP REGULATORY LEVEL			NA	NA	NA	NA	5

NOTES:

1. Samples were screened in the field using an X-ray fluorescence analyzer.
2 ND = Not detected above instrument accuracy limits for that sample. Accuracy (+/-) for the sample is shown in parenthesis.
3. **Bold** concentrations exceed the applicable NH DES Env-Or 600 SRSs or Env-Hw 400 TCLP regulatory level.
4. Background concentrations of metals in soil from report entitled "Background Metals Concentration Study New Hampshire Soils", prepared for NH DES by Sanborn, Head & Associates, Inc., dated November 1998.



RANSOM
Consulting Engineers and Scientists

Regional Locator Map

Notes

1. Data Source: USGS National Map Seamless Server, 24K DRG, 1/3" NED
2. USGS Quad Name: Portsmouth
3. Latitude: 43° 5' 10" N
   Longitude: 70° 46' 46" W
   UTM Northing: 4771920 mN
   UTM Easting: 355149 mE

Scale and Orientation

0 1,000 2,000

1 inch = 2,000 feet

Prepared For

City of Portsmouth Department of Public Works
1 Junkins Avenue
Portsmouth, New Hampshire

Site Address

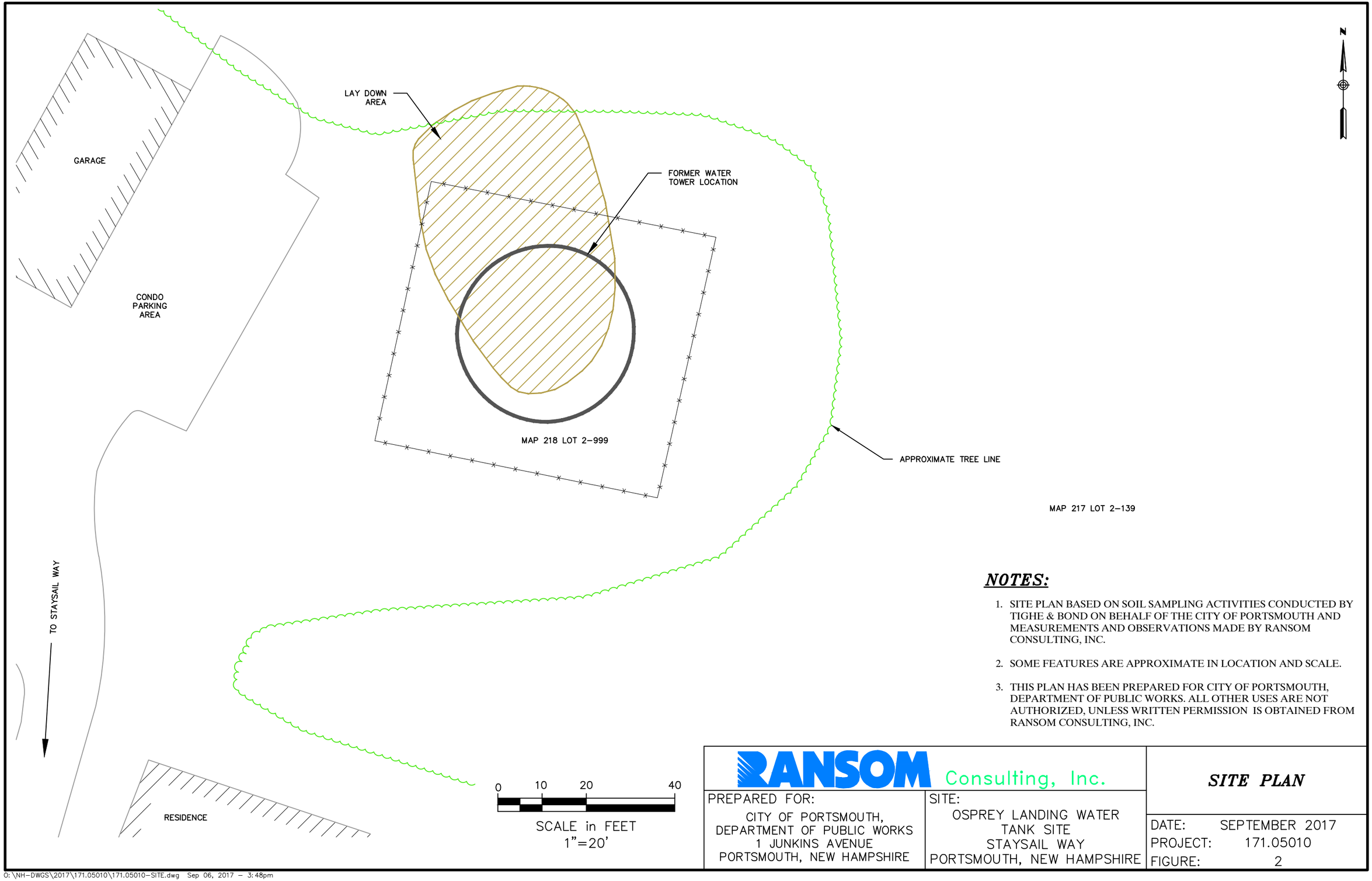
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

171.05010 | Sep 2017

Figure 1

Site Location Map

G:\Data\NH\Project\171_05010\Maps\Figure_1.mxd



NOTES:

1. SITE PLAN BASED ON SOIL SAMPLING ACTIVITIES CONDUCTED BY TIGHE & BOND ON BEHALF OF THE CITY OF PORTSMOUTH AND MEASUREMENTS AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.
3. THIS PLAN HAS BEEN PREPARED FOR CITY OF PORTSMOUTH, DEPARTMENT OF PUBLIC WORKS. ALL OTHER USES ARE NOT AUTHORIZED, UNLESS WRITTEN PERMISSION IS OBTAINED FROM RANSOM CONSULTING, INC.

RANSOM Consulting, Inc.

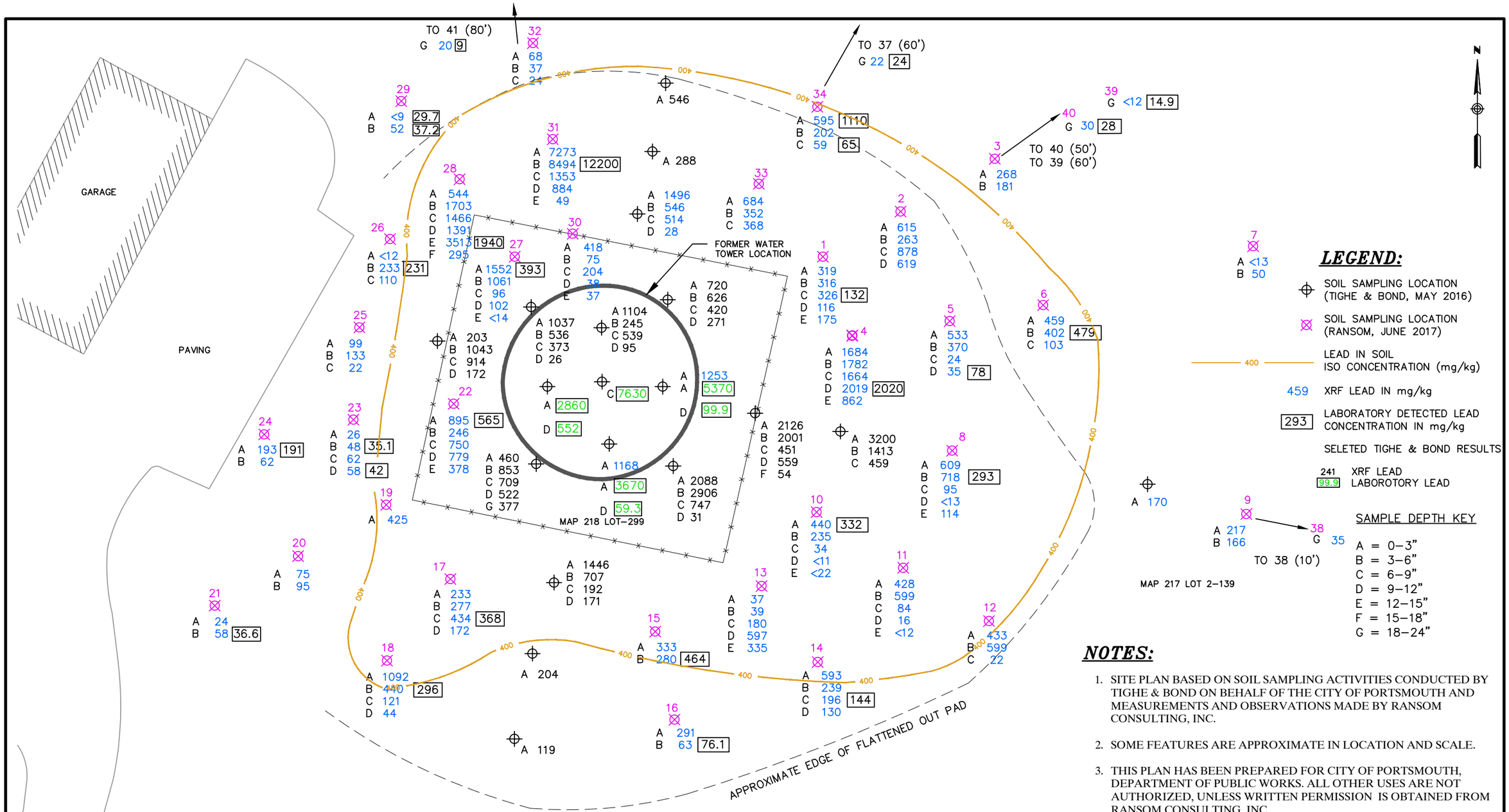
PREPARED FOR:
CITY OF PORTSMOUTH,
DEPARTMENT OF PUBLIC WORKS
1 JUNKINS AVENUE
PORTSMOUTH, NEW HAMPSHIRE

SITE:
OSPREY LANDING WATER
TANK SITE
STAYSAIL WAY
PORTSMOUTH, NEW HAMPSHIRE

SITE PLAN

DATE: SEPTEMBER 2017
PROJECT: 171.05010
FIGURE: 2

O:\NH-DWGS\2017\171.05010\171.05010-SITE.dwg Sep 06, 2017 - 3:48pm



LEGEND:

- SOIL SAMPLING LOCATION (TIGHE & BOND, MAY 2016)
- SOIL SAMPLING LOCATION (RANSOM, JUNE 2017)
- 400 — LEAD IN SOIL ISO CONCENTRATION (mg/kg)
- 459 — XRF LEAD IN mg/kg
- 293 — LABORATORY DETECTED LEAD CONCENTRATION IN mg/kg
- SELETED TIGHE & BOND RESULTS
- 241 / 99.9 — XRF LEAD / LABOROTORY LEAD

SAMPLE DEPTH KEY

A = 0–3”
B = 3–6”
C = 6–9”
D = 9–12”
E = 12–15”
F = 15–18”
G = 18–24”

NOTES:

1. SITE PLAN BASED ON SOIL SAMPLING ACTIVITIES CONDUCTED BY TIGHE & BOND ON BEHALF OF THE CITY OF PORTSMOUTH AND MEASUREMENTS AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.
3. THIS PLAN HAS BEEN PREPARED FOR CITY OF PORTSMOUTH, DEPARTMENT OF PUBLIC WORKS. ALL OTHER USES ARE NOT AUTHORIZED, UNLESS WRITTEN PERMISSION IS OBTAINED FROM RANSOM CONSULTING, INC.

0 10 20 40

SCALE in FEET
1”=20’

RANSOM Consulting, Inc.

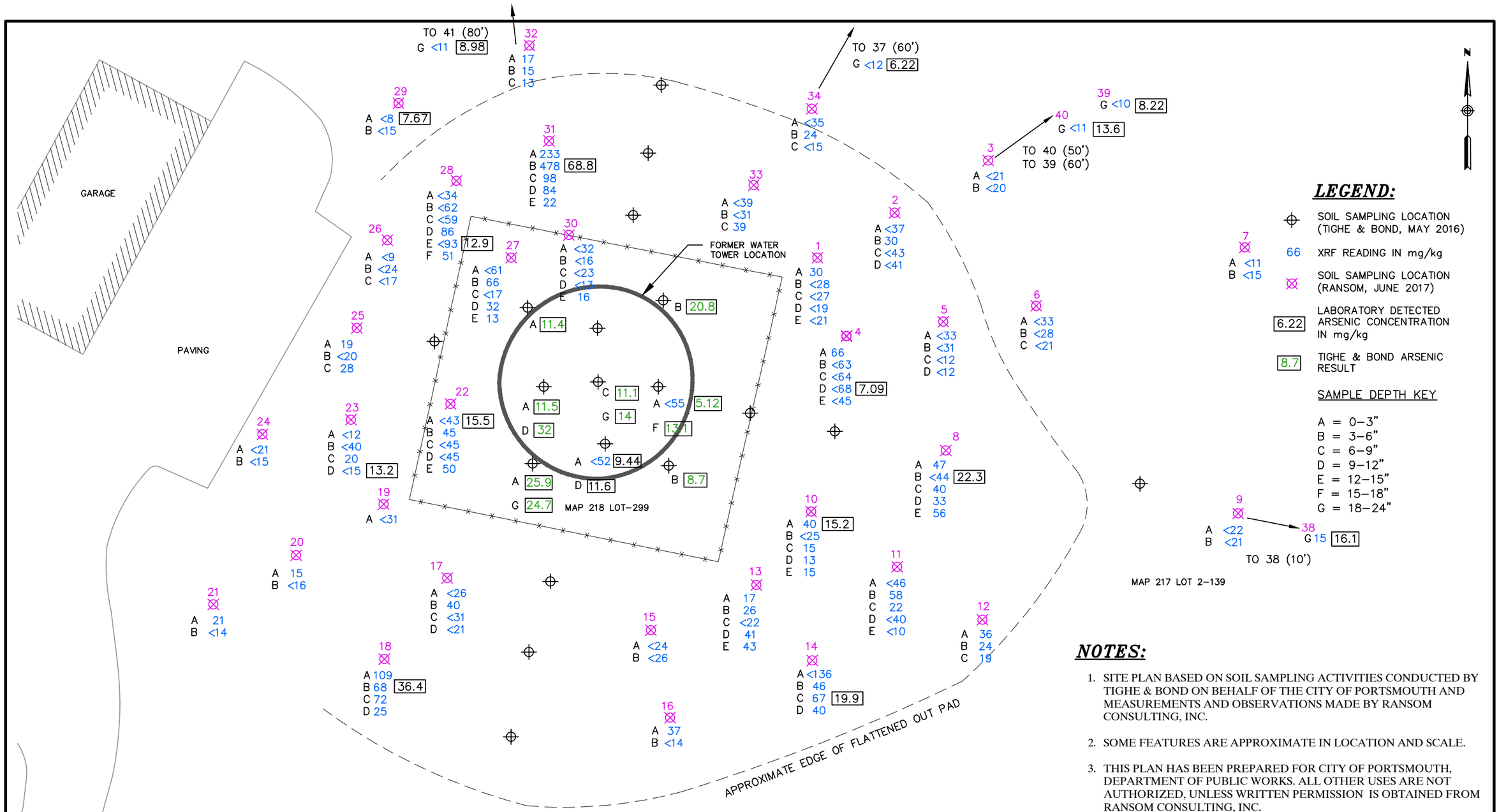
PREPARED FOR:
CITY OF PORTSMOUTH,
DEPARTMENT OF PUBLIC WORKS
1 JUNKINS AVENUE
PORTSMOUTH, NEW HAMPSHIRE

SITE:
OSPREY LANDING WATER
TANK SITE
STAYSAIL WAY
PORTSMOUTH, NEW HAMPSHIRE

LEAD DISTRIBUTION IN SOILS

DATE: SEPTEMBER 2017
PROJECT: 171.05010
FIGURE: 3

O:\NH-DWGS\2017\171.05010\171.05010-SAMPLING.dwg Sep 06, 2017 - 3:56pm



LEGEND:

- SOIL SAMPLING LOCATION (TIGHE & BOND, MAY 2016)
- 66 — XRF READING IN mg/kg
- SOIL SAMPLING LOCATION (RANSOM, JUNE 2017)
- 6.22 — LABORATORY DETECTED ARSENIC CONCENTRATION IN mg/kg
- 8.7 — TIGHE & BOND ARSENIC RESULT

SAMPLE DEPTH KEY

A = 0–3"
B = 3–6"
C = 6–9"
D = 9–12"
E = 12–15"
F = 15–18"
G = 18–24"

NOTES:

1. SITE PLAN BASED ON SOIL SAMPLING ACTIVITIES CONDUCTED BY TIGHE & BOND ON BEHALF OF THE CITY OF PORTSMOUTH AND MEASUREMENTS AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.
3. THIS PLAN HAS BEEN PREPARED FOR CITY OF PORTSMOUTH, DEPARTMENT OF PUBLIC WORKS. ALL OTHER USES ARE NOT AUTHORIZED, UNLESS WRITTEN PERMISSION IS OBTAINED FROM RANSOM CONSULTING, INC.

RANSOM Consulting, Inc.

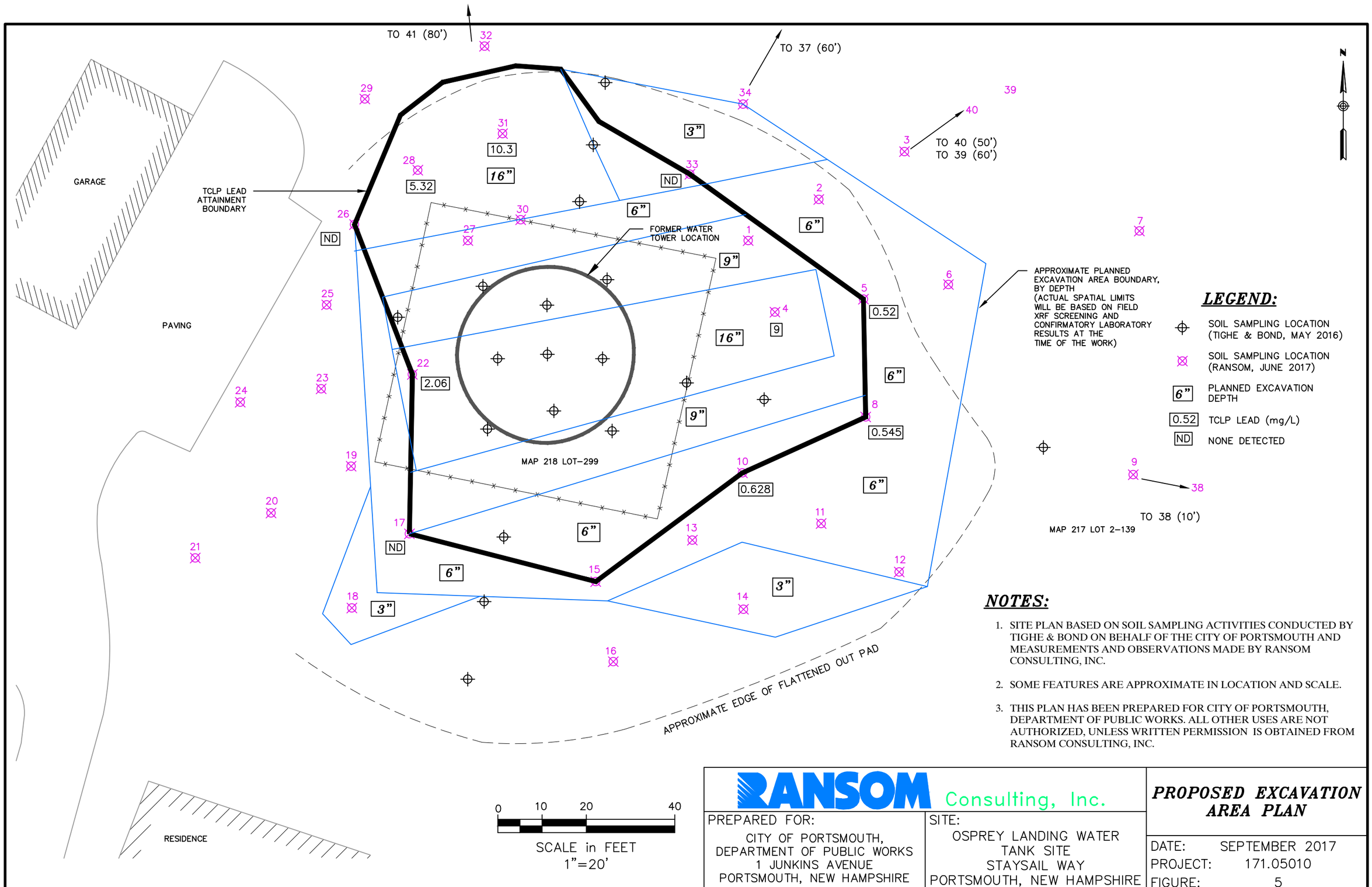
PREPARED FOR:
CITY OF PORTSMOUTH,
DEPARTMENT OF PUBLIC WORKS
1 JUNKINS AVENUE
PORTSMOUTH, NEW HAMPSHIRE

SITE:
OSPREY LANDING WATER TANK SITE
STAYSAIL WAY
PORTSMOUTH, NEW HAMPSHIRE

ARSENIC DISTRIBUTION IN SOILS

DATE: SEPTEMBER 2017
PROJECT: 171.05010
FIGURE: 4

O:\NH-DWGS\2017\171.05010\171.05010-SAMPLING.dwg Sep 06, 2017 - 3:55pm



NOTES:

1. SITE PLAN BASED ON SOIL SAMPLING ACTIVITIES CONDUCTED BY TIGHE & BOND ON BEHALF OF THE CITY OF PORTSMOUTH AND MEASUREMENTS AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.
3. THIS PLAN HAS BEEN PREPARED FOR CITY OF PORTSMOUTH, DEPARTMENT OF PUBLIC WORKS. ALL OTHER USES ARE NOT AUTHORIZED, UNLESS WRITTEN PERMISSION IS OBTAINED FROM RANSOM CONSULTING, INC.

RANSOM Consulting, Inc.

PREPARED FOR:
CITY OF PORTSMOUTH,
DEPARTMENT OF PUBLIC WORKS
1 JUNKINS AVENUE
PORTSMOUTH, NEW HAMPSHIRE

SITE:
OSPREY LANDING WATER TANK SITE
STAYSAIL WAY
PORTSMOUTH, NEW HAMPSHIRE

PROPOSED EXCAVATION AREA PLAN

DATE: SEPTEMBER 2017
PROJECT: 171.05010
FIGURE: 5

O:\NH–DWGS\2017\171.05010\171.05010–SAMPLING.dwg Sep 06, 2017 – 3:57pm

APPENDIX A

Tighe & Bond Investigation Results

Remedial Action Plan
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

Project Name: CITY OF PORTSMOUTH
Project Number: HOBBSHILL

Lab Number: L1517652
Report Date: 08/06/15

SAMPLE RESULTS

Lab ID: L1517652-01
Client ID: OSPREY LANDING WT-LEG 1
Sample Location: OSPREY LANDING WT/PEASE TRADEPOST/HOBBS
Matrix: Paint Chips
Analytical Method: 1,8082A
Analytical Date: 08/03/15 17:21
Analyst: JT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/29/15 10:20
Date Received: 07/29/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 08/01/15 09:18
Cleanup Method: EPA 3665A
Cleanup Date: 08/02/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/02/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	87.4	--	1	A
Aroclor 1221	ND		ug/kg	87.4	--	1	A
Aroclor 1232	ND		ug/kg	87.4	--	1	A
Aroclor 1242	ND		ug/kg	87.4	--	1	A
Aroclor 1248	ND		ug/kg	87.4	--	1	A
Aroclor 1254	ND		ug/kg	87.4	--	1	A
Aroclor 1260	ND		ug/kg	87.4	--	1	A
Aroclor 1262	ND		ug/kg	87.4	--	1	A
Aroclor 1268	ND		ug/kg	87.4	--	1	A
PCBs, Total	ND		ug/kg	87.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	7	Q	30-150	A
Decachlorobiphenyl	3	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	7	Q	30-150	B
Decachlorobiphenyl	4	Q	30-150	B

Project Name: CITY OF PORTSMOUTH
Project Number: HOBBSHILL
Lab Number: L1517652
Report Date: 08/06/15

SAMPLE RESULTS

Lab ID: L1517652-01 RE
Client ID: OSPREY LANDING WT-LEG 1
Sample Location: OSPREY LANDING WT/PEASE TRADEPOST/HOBBS
Matrix: Paint Chips
Analytical Method: 1,8082A
Analytical Date: 08/05/15 17:59
Analyst: JT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/29/15 10:20
Date Received: 07/29/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 08/04/15 20:00
Cleanup Method: EPA 3665A
Cleanup Date: 08/05/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/05/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	495	--	1	A
Aroclor 1221	ND		ug/kg	495	--	1	A
Aroclor 1232	ND		ug/kg	495	--	1	A
Aroclor 1242	ND		ug/kg	495	--	1	A
Aroclor 1248	ND		ug/kg	495	--	1	A
Aroclor 1254	ND		ug/kg	495	--	1	A
Aroclor 1260	ND		ug/kg	495	--	1	A
Aroclor 1262	ND		ug/kg	495	--	1	A
Aroclor 1268	ND		ug/kg	495	--	1	A
PCBs, Total	ND		ug/kg	495	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	5	Q	30-150	A
Decachlorobiphenyl	3	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	5	Q	30-150	B
Decachlorobiphenyl	3	Q	30-150	B

Project Name: CITY OF PORTSMOUTH
Project Number: HOBBSHILL

Lab Number: L1517652
Report Date: 08/06/15

SAMPLE RESULTS

Lab ID: L1517652-02
Client ID: OSPREY LANDING WT-LEG 3
Sample Location: OSPREY LANDING WT/PEASE TRADEPOST/HOBBS
Matrix: Paint Chips
Analytical Method: 1,8082A
Analytical Date: 08/03/15 17:36
Analyst: JT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/29/15 10:30
Date Received: 07/29/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 08/01/15 09:18
Cleanup Method: EPA 3665A
Cleanup Date: 08/02/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/02/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	92.6	--	1	A
Aroclor 1221	ND		ug/kg	92.6	--	1	A
Aroclor 1232	ND		ug/kg	92.6	--	1	A
Aroclor 1242	ND		ug/kg	92.6	--	1	A
Aroclor 1248	ND		ug/kg	92.6	--	1	A
Aroclor 1254	ND		ug/kg	92.6	--	1	A
Aroclor 1260	ND		ug/kg	92.6	--	1	A
Aroclor 1262	ND		ug/kg	92.6	--	1	A
Aroclor 1268	ND		ug/kg	92.6	--	1	A
PCBs, Total	ND		ug/kg	92.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	10	Q	30-150	A
Decachlorobiphenyl	5	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	9	Q	30-150	B
Decachlorobiphenyl	6	Q	30-150	B

Project Name: CITY OF PORTSMOUTH
Project Number: HOBBSHILL

Lab Number: L1517652
Report Date: 08/06/15

SAMPLE RESULTS

Lab ID: L1517652-02 RE
Client ID: OSPREY LANDING WT-LEG 3
Sample Location: OSPREY LANDING WT/PEASE TRADEPOST/HOBBS
Matrix: Paint Chips
Analytical Method: 1,8082A
Analytical Date: 08/05/15 18:15
Analyst: JT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/29/15 10:30
Date Received: 07/29/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 08/04/15 20:00
Cleanup Method: EPA 3665A
Cleanup Date: 08/05/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/05/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	272	--	1	A
Aroclor 1221	ND		ug/kg	272	--	1	A
Aroclor 1232	ND		ug/kg	272	--	1	A
Aroclor 1242	ND		ug/kg	272	--	1	A
Aroclor 1248	ND		ug/kg	272	--	1	A
Aroclor 1254	ND		ug/kg	272	--	1	A
Aroclor 1260	ND		ug/kg	272	--	1	A
Aroclor 1262	ND		ug/kg	272	--	1	A
Aroclor 1268	ND		ug/kg	272	--	1	A
PCBs, Total	ND		ug/kg	272	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	8	Q	30-150	A
Decachlorobiphenyl	3	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	8	Q	30-150	B
Decachlorobiphenyl	3	Q	30-150	B

Project Name: CITY OF PORTSMOUTH
Project Number: HOBBSHILL
Lab Number: L1517652
Report Date: 08/06/15

SAMPLE RESULTS

Lab ID: L1517652-03
Client ID: OSPREY LANDING WT-LEG 5
Sample Location: OSPREY LANDING WT/PEASE TRADEPOST/HOBBS
Matrix: Paint Chips
Analytical Method: 1,8082A
Analytical Date: 08/03/15 17:52
Analyst: JT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/29/15 10:40
Date Received: 07/29/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 08/01/15 09:18
Cleanup Method: EPA 3665A
Cleanup Date: 08/02/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/02/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	94.2	--	1	A
Aroclor 1221	ND		ug/kg	94.2	--	1	A
Aroclor 1232	ND		ug/kg	94.2	--	1	A
Aroclor 1242	ND		ug/kg	94.2	--	1	A
Aroclor 1248	ND		ug/kg	94.2	--	1	A
Aroclor 1254	ND		ug/kg	94.2	--	1	A
Aroclor 1260	ND		ug/kg	94.2	--	1	A
Aroclor 1262	ND		ug/kg	94.2	--	1	A
Aroclor 1268	ND		ug/kg	94.2	--	1	A
PCBs, Total	ND		ug/kg	94.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	9	Q	30-150	A
Decachlorobiphenyl	5	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	9	Q	30-150	B
Decachlorobiphenyl	6	Q	30-150	B

Project Name: CITY OF PORTSMOUTH
Project Number: HOBBSHILL

Lab Number: L1517652
Report Date: 08/06/15

SAMPLE RESULTS

Lab ID: L1517652-03 RE
Client ID: OSPREY LANDING WT-LEG 5
Sample Location: OSPREY LANDING WT/PEASE TRADEPOST/HOBBS
Matrix: Paint Chips
Analytical Method: 1,8082A
Analytical Date: 08/05/15 18:32
Analyst: JT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/29/15 10:40
Date Received: 07/29/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 08/04/15 20:00
Cleanup Method: EPA 3665A
Cleanup Date: 08/05/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/05/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	417	--	1	A
Aroclor 1221	ND		ug/kg	417	--	1	A
Aroclor 1232	ND		ug/kg	417	--	1	A
Aroclor 1242	ND		ug/kg	417	--	1	A
Aroclor 1248	ND		ug/kg	417	--	1	A
Aroclor 1254	ND		ug/kg	417	--	1	A
Aroclor 1260	ND		ug/kg	417	--	1	A
Aroclor 1262	ND		ug/kg	417	--	1	A
Aroclor 1268	ND		ug/kg	417	--	1	A
PCBs, Total	ND		ug/kg	417	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	3	Q	30-150	A
Decachlorobiphenyl	1	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	3	Q	30-150	B
Decachlorobiphenyl	1	Q	30-150	B

Osprey Landing Water Tank Soil Analytical Results
Portsmouth, New Hampshire

Sample Designation	S-1 0-3"	S-1 24"	S-2 0-3"	S-3 9-12"	S-4 3-6"	S-9 0-3"	S-9 9-12"	S-10 3-6"	S-10 9-12"	S-12 0-3"	S-12 16"	S-13 6-9"	S-13 20"	NH Soil
Sample Date	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	5/12/2016	Remediation
Sample Depth	0-3"	24"	0-3"	9-12"	3-6"	0-3"	9-12"	3-6"	9-12"	0-3"	16"	6-9"	20"	Standards*
Total Metals														
Arsenic	**25.9**	**24.7**	**11.4**	**20.8**	8.70	9.44	**11.6**	**11.5**	**32.0**	5.12	**13.1**	**11.1**	**14.0**	11
Barium	38.2	44.1	30.0	29.8	26.2	55.3	17.6	32.2	91.7	24.1	16.4	53.1	13.2	1,000
Cadmium	< 0.47	< 0.46	< 0.5	< 0.48	< 0.43	0.90	< 0.46	0.51	7.81	< 0.46	< 0.48	< 0.46	< 0.48	33
Chromium	51.1	41.6	60.7	35.6	102	214	30.8	123	37.6	301	14.0	102	14.4	NE
Lead	334	104	**912**	166	**1,370**	**3,670**	**593**	**2,860**	**552**	**5,730**	99.9	**7,630**	39.9	400
Mercury	< 0.034	< 0.032	0.038	< 0.029	< 0.03	0.032	< 0.031	0.051	< 0.029	< 0.028	< 0.029	< 0.033	< 0.033	6
Selenium	< 0.47	< 0.46	< 0.5	< 0.48	< 0.43	< 0.43	< 0.46	< 0.46	< 0.46	< 0.46	< 0.48	< 0.46	< 0.48	180
Silver	0.48	0.51	< 0.5	< 0.48	< 0.43	0.47	< 0.46	0.55	0.57	< 0.46	< 0.48	0.51	< 0.48	89

Results reported in milligrams-per-kilogram (mg/kg) or parts-per-million (ppm)

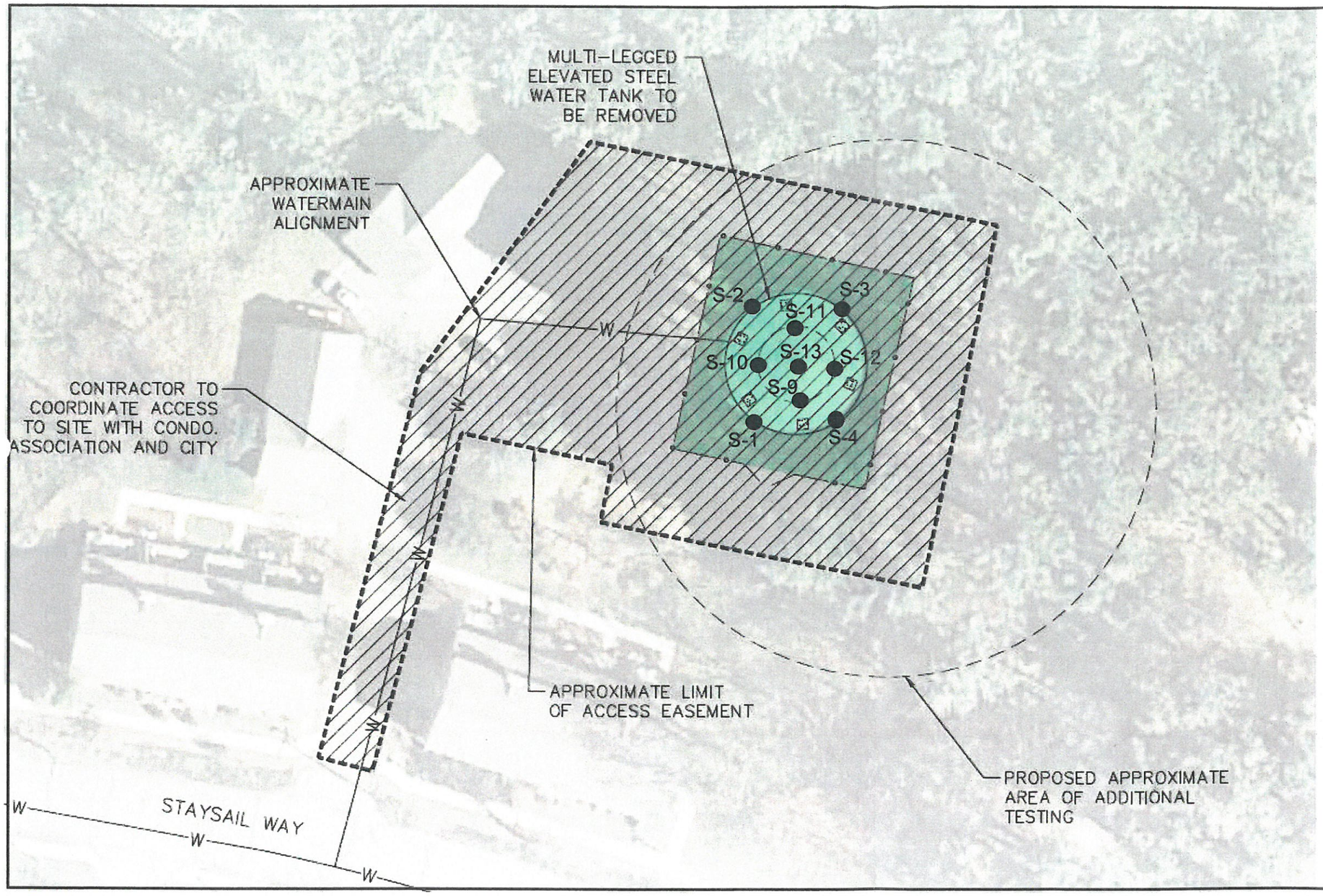
< Indicates that the analyte was not detected at the noted limit

*Soil Remediation Standards from Env-Or 600 of the NH Code of Administrative Rules

Bold text denotes results that exceed soil NH Soil Remediation Standards

NOTE: THE APPROXIMATE SAMPLE LOCATIONS ARE SHOWN ON THE SOIL SAMPLE LOCATION PLANS ON THE FOLLOWING PAGES

Tighe&Bond
Engineers | Environmental Specialists



LEGEND

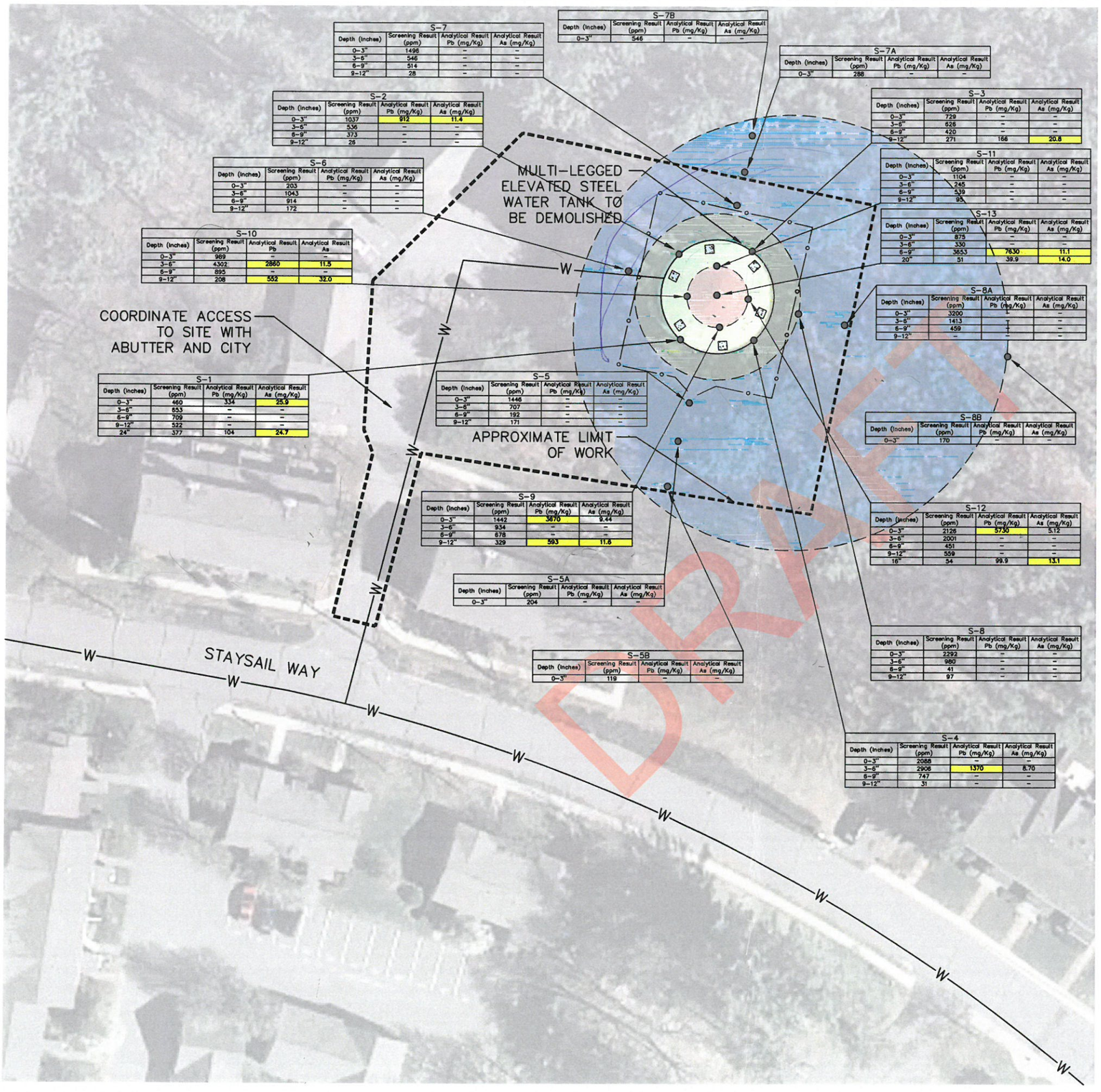
- APPROXIMATE LIMIT OF ACCESS EASEMENT
- CHAINLINK FENCE
- EXISTING WATER LINE — W —
- CONCRETE FOOTINGS
- APPROXIMATE CITY OF PORTSMOUTH PROPERTY LIMITS
- APPROXIMATE AREA THAT MAY BE DISTURBED DURING TANK REMOVAL
- APPROXIMATE SOIL SAMPLE LOCATION — S-1

SOIL SAMPLE LOCATION PLAN
OSPREY LANDING WATER TANK
PORTSMOUTH, NH

SAMPLES WERE COLLECTED
ON MAY 12, 2016 BY
TIGHE & BOND
177 CORPORATE DRIVE
PORTSMOUTH, NH 03801
(603)433-8818

SEE TABLE 2 FOR SUMMARY OF RESULTS

Tighe&Bond
Engineers | Environmental Specialists



S-7			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	1496	-	-
3-6"	546	-	-
6-9"	514	-	-
9-12"	28	-	-

S-7B			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	546	-	-

S-7A			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	288	-	-

S-2			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	1037	912	11.4
3-6"	536	-	-
6-9"	373	-	-
9-12"	26	-	-

S-3			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	729	-	-
3-6"	626	-	-
6-9"	420	-	-
9-12"	271	166	20.8

S-6			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	203	-	-
3-6"	1043	-	-
6-9"	914	-	-
9-12"	172	-	-

S-11			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	1104	-	-
3-6"	245	-	-
6-9"	539	-	-
9-12"	95	-	-

S-10			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb	Analytical Result As
0-3"	989	-	-
3-6"	4302	2860	11.5
6-9"	895	-	-
9-12"	208	552	32.0

S-13			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	875	-	-
3-6"	330	-	-
6-9"	3653	7630	11.1
20"	51	39.9	14.0

S-8A			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	3200	-	-
3-6"	1413	-	-
6-9"	459	-	-
9-12"	-	-	-

S-1			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	460	334	25.9
3-6"	853	-	-
6-9"	709	-	-
9-12"	522	-	-
24"	377	104	24.7

S-5			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	1446	-	-
3-6"	707	-	-
6-9"	192	-	-
9-12"	171	-	-

S-8B			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	170	-	-

S-9			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	1442	3870	9.44
3-6"	934	-	-
6-9"	678	-	-
9-12"	329	593	11.6

S-12			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	2126	5730	5.12
3-6"	2001	-	-
6-9"	451	-	-
9-12"	559	-	-
16"	54	99.9	13.1

S-5A			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	204	-	-

S-8			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	2292	-	-
3-6"	980	-	-
6-9"	41	-	-
9-12"	97	-	-

S-5B			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	119	-	-

S-4			
Depth (inches)	Screening Result (ppm)	Analytical Result Pb (mg/Kg)	Analytical Result As (mg/Kg)
0-3"	2088	-	-
3-6"	2906	1370	8.70
6-9"	747	-	-
9-12"	31	-	-

DRAFT

DEMOLITION NOTES:

1. THE EXISTING TANK HAS AN EXTERNAL DIAMETER OF 38 FEET AND A SHELL HEIGHT OF 70 FEET. THE TANK IS CONSTRUCTED OF RIVETED STEEL PLATES, THICKNESS MAY VARY BY HEIGHT. REFER TO APPENDIX A OF THE SPECIFICATIONS FOR TANK CONSTRUCTION RECORD PLANS.
2. OWNER SHALL BE RESPONSIBLE FOR DRAINING TANK PRIOR TO DEMOLITION WORK.
3. CONTRACTOR SHALL PROPERLY DISPOSE OF ANY SEDIMENT IN TANK PRIOR TO DEMOLITION WORK.
4. PROMPTLY REMOVE DEMOLITION MATERIALS FROM SITE. STOCKPILING DEMOLITION DEBRIS ON SITE WILL NOT BE ALLOWED.
5. PROTECT ANY EXISTING VALVES, VALVE VAULTS AND DRAINAGE STRUCTURES DURING DEMOLITION ACTIVITIES.
6. PHOTOS ARE FOR VISUAL PURPOSES ONLY. REFER TO DRAWING FOR LIMIT OF DEMOLITION ACTIVITY.
7. PROTECT EXISTING SITE PIPING DURING CONSTRUCTION ACTIVITY. REPAIR AND/OR REPLACE PIPES THAT ARE DAMAGED DURING DEMOLITION ACTIVITY.
8. PROTECT EXISTING RESIDENTIAL PROPERTY, SITE PIPING AND UTILITIES DURING CONSTRUCTION ACTIVITIES. REPAIR AND/OR REPLACE EXISTING FACILITIES THAT ARE DAMAGED.
9. REMOVE EXISTING STORAGE TANK CONCRETE FOUNDATIONS TO A MINIMUM ONE FOOT BELOW GRADE.
10. CONTRACTOR SHALL TAKE NOTICE THAT THE TANK COATINGS MAY CONTAIN CONCENTRATIONS OF METALS OR OTHER SUBSTANCES THAT POSE A RISK TO THE ENVIRONMENT OR WORKERS IF ALLOWED TO BE RELEASED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE SITE, NEARBY PROPERTIES, THE PUBLIC AND WORKERS FROM THE RELEASE OF PAINT PARTICLES DURING DEMOLITION AND IS RESPONSIBLE FOR ANY CLEANUP ASSOCIATED WITH THE DEMOLITION ACTIVITIES.

GENERAL NOTES:

1. SCANNED IMAGES ARE BASED ON DRAWINGS OF EXISTING STORAGE TANK BY CHICAGO BRIDGE & IRON WORKS, 1924.
2. UTILITIES AND APPURTENANCES AS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY, AND THE EXACT SIZE, TYPE, LOCATION AND ELEVATION SHALL BE THOROUGHLY INVESTIGATED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
3. FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS ARE OBSERVED THAT VARY SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING FOR RESOLUTION OF THE CONFLICTING INFORMATION.
4. BOLD TEXT AND LINES INDICATE PROPOSED WORK.
5. LIGHT TEXT AND LINES INDICATE EXISTING CONDITIONS.
6. PROVIDE A SUPPLY OF ABSORBENT SPILL RESPONSE MATERIALS, SUCH AS BOOMS OR BLANKETS, AT THE CONSTRUCTION SITE AT ALL TIMES TO CLEAN UP POTENTIAL SPILLS OF HAZARDOUS MATERIALS.
7. IMMEDIATELY REPORT SPILLS OF HAZARDOUS MATERIALS TO THE CT DEPARTMENT OF ENVIRONMENTAL PROTECTION OIL AND CHEMICAL SPILLS UNIT AT 860-566-3338.
8. NOTIFY THE OWNER AND THE ENGINEER OF ANY STORM, SANITARY, OR OTHER PIPE DISCOVERED DURING CONSTRUCTION THAT IS NOT SHOWN ON THE DRAWINGS.
9. SEE APPENDIX A OF THE SPECIFICATIONS FOR EXISTING TANK MANUFACTURER'S DRAWINGS, DATED 1924.
10. ACCOMPLISH ALL EXCAVATIONS SO THAT UNDERGROUND UTILITIES OR STRUCTURES ARE NOT DAMAGED. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE INCURRED DURING EXCAVATION OPERATIONS. REPAIR ANY EXISTING PIPE OR UTILITY DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

LEGEND

- APPROXIMATE LIMIT OF WORK
- CHAINLINK FENCE TO BE DEMOLISHED
- EXISTING WATER LINE (W)
- LIMIT OF DEMOLITION
- CONCRETE

- Excavate to 16" BSG
- Excavate to 9" BSG
- Excavate to 6" BSG
- Excavate to 3" BSG

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

N

Tighe&Bond
Consulting Engineers
www.tighebond.com

City of Portsmouth

Osprey Landing Water Tank Demolition

Portsmouth, New Hampshire

May, 2016

Mark	Date	Description

PROJECT NO:	P-0714
FILE:	P0714-1_DEMO_OSPREY_MTT.Sv
DRAWN BY:	CML
CHECKED:	WJD
APPROVED BY:	WJD

DEMOLITION PLAN - EXISTING OSPREY LANDING TANK

SCALE: AS SHOWN

SHEET 2

FILENAME: J:\P\0714 CITY OF PORTSMOUTH - HOBBS HILL WATER TANK\ENVIRONMENTAL ASSESSMENT - LEAD SCREENING\FIGURES\OSPREY LANDING\P0714-1_DEMO_OSPREY_MTT_SOIL ESTIMATE.DWG
SAVE DATE: 6/3/2016 2:25 PM
PLOT DATE: 6/3/2016 2:52 PM

APPENDIX B

Laboratory Reports

Remedial Action Plan
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

ANALYTICAL REPORT

Lab Number:	L1719516
Client:	Ransom Consulting, Inc. 112 Corporate Drive Pease International Tradeport Portsmouth, NH 03801
ATTN:	Jay Johonnett
Phone:	(603) 436-1490
Project Name:	OSPREY LANDING
Project Number:	171.05010
Report Date:	08/08/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1719516-01	23B	SOIL	PORTSMOUTH, NH	06/02/17 12:48	06/12/17
L1719516-02	21B	SOIL	PORTSMOUTH, NH	06/02/17 12:27	06/12/17
L1719516-03	16B	SOIL	PORTSMOUTH, NH	06/02/17 11:48	06/12/17
L1719516-04	5D	SOIL	PORTSMOUTH, NH	06/02/17 09:36	06/12/17
L1719516-05	34C	SOIL	PORTSMOUTH, NH	06/02/17 14:51	06/12/17
L1719516-06	29B	SOIL	PORTSMOUTH, NH	06/02/17 13:57	06/12/17
L1719516-07	24A	SOIL	PORTSMOUTH, NH	06/02/17 12:57	06/12/17
L1719516-08	15B	SOIL	PORTSMOUTH, NH	06/02/17 11:42	06/12/17
L1719516-09	3B	SOIL	PORTSMOUTH, NH	06/02/17 09:09	06/12/17
L1719516-10	9A	SOIL	PORTSMOUTH, NH	06/02/17 10:09	06/12/17
L1719516-11	26B	SOIL	PORTSMOUTH, NH	06/02/17 13:15	06/12/17
L1719516-12	14C	SOIL	PORTSMOUTH, NH	06/02/17 11:33	06/12/17
L1719516-13	17C	SOIL	PORTSMOUTH, NH	06/02/17 11:57	06/12/17
L1719516-14	10A	SOIL	PORTSMOUTH, NH	06/02/17 10:15	06/12/17
L1719516-15	6B	SOIL	PORTSMOUTH, NH	06/02/17 09:42	06/12/17
L1719516-16	1C	SOIL	PORTSMOUTH, NH	06/02/17 08:45	06/12/17
L1719516-17	18B	SOIL	PORTSMOUTH, NH	06/02/17 12:06	06/12/17
L1719516-18	34A	SOIL	PORTSMOUTH, NH	06/02/17 14:45	06/12/17
L1719516-19	22A	SOIL	PORTSMOUTH, NH	06/02/17 12:30	06/12/17
L1719516-20	8B	SOIL	PORTSMOUTH, NH	06/02/17 09:57	06/12/17
L1719516-21	4D	SOIL	PORTSMOUTH, NH	06/02/17 09:21	06/12/17
L1719516-22	31B	SOIL	PORTSMOUTH, NH	06/02/17 14:18	06/12/17
L1719516-23	28E	SOIL	PORTSMOUTH, NH	06/02/17 13:48	06/12/17
L1719516-24	27A	SOIL	PORTSMOUTH, NH	06/02/17 13:21	06/12/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1719516-25	38 18-24"	SOIL	PORTSMOUTH, NH	06/02/17 15:06	06/12/17
L1719516-26	39 18-24"	SOIL	PORTSMOUTH, NH	06/02/17 15:09	06/12/17
L1719516-27	40 18-24"	SOIL	PORTSMOUTH, NH	06/02/17 15:12	06/12/17
L1719516-28	41 18-24"	SOIL	PORTSMOUTH, NH	06/02/17 15:15	06/12/17
L1719516-29	37 18-24"	SOIL	PORTSMOUTH, NH	06/02/17 15:03	06/12/17
L1719516-30	29A	SOIL	PORTSMOUTH, NH	06/02/17 13:54	06/12/17
L1719516-31	23D	SOIL	PORTSMOUTH, NH	06/02/17 12:54	06/12/17

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	OSPREY LANDING	**Lab Number:**	L1719516
Project Number:	171.05010	**Report Date:**	08/08/17

Case Narrative (continued)

Report Submission

This report replaces the report issued June 19, 2017. The Total Metals analyte list has been amended on L1719516-12, -14, -17, and -19 through -23..

Total Metals

The WG1012754-3 MS recovery for lead (1950%), performed on L1719516-21, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kara Lindquist

Title: Technical Director/Representative Date: 08/08/17

METALS

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-01
Client ID: 23B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 88%

Date Collected: 06/02/17 12:48
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	35.1		mg/kg	2.22	--	1	06/13/17 20:06	06/16/17 17:49	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-02
Client ID: 21B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 85%

Date Collected: 06/02/17 12:27
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	36.6		mg/kg	2.32	--	1	06/13/17 20:06	06/16/17 18:31	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-03
Client ID: 16B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 70%

Date Collected: 06/02/17 11:48
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	76.1		mg/kg	2.81	--	1	06/13/17 20:06	06/16/17 18:35	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-04
Client ID: 5D
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 95%

Date Collected: 06/02/17 09:36
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	78.0		mg/kg	2.07	--	1	06/13/17 20:06	06/16/17 18:40	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-05
Client ID: 34C
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 73%

Date Collected: 06/02/17 14:51
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	65.0		mg/kg	2.72	--	1	06/13/17 20:06	06/16/17 18:45	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-06
Client ID: 29B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 81%

Date Collected: 06/02/17 13:57
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	37.2		mg/kg	2.40	--	1	06/13/17 20:06	06/16/17 18:49	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-07
Client ID: 24A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 80%

Date Collected: 06/02/17 12:57
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	191		mg/kg	2.48	--	1	06/13/17 20:06	06/16/17 18:54	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-08
Client ID: 15B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 64%

Date Collected: 06/02/17 11:42
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	464		mg/kg	3.06	--	1	06/13/17 20:06	06/16/17 19:13	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-09
Client ID: 3B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 71%

Date Collected: 06/02/17 09:09
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	135		mg/kg	2.79	--	1	06/13/17 20:06	06/16/17 19:18	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-10
Client ID: 9A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 68%

Date Collected: 06/02/17 10:09
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	300		mg/kg	2.90	--	1	06/13/17 20:06	06/16/17 19:23	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-11
Client ID: 26B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 88%

Date Collected: 06/02/17 13:15
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	231		mg/kg	2.22	--	1	06/13/17 20:06	06/16/17 19:27	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-12
Client ID: 14C
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 87%

Date Collected: 06/02/17 11:33
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	19.9		mg/kg	0.434	--	1	06/13/17 20:06	06/16/17 19:32	EPA 3050B	1,6010C	AB
Lead, Total	144		mg/kg	2.17	--	1	06/13/17 20:06	06/16/17 19:32	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-13
Client ID: 17C
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 75%

Date Collected: 06/02/17 11:57
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	368		mg/kg	2.62	--	1	06/13/17 20:06	06/16/17 19:37	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-14
Client ID: 10A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 86%

Date Collected: 06/02/17 10:15
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	15.2		mg/kg	0.455	--	1	06/13/17 20:06	06/16/17 19:42	EPA 3050B	1,6010C	AB
Lead, Total	332		mg/kg	2.27	--	1	06/13/17 20:06	06/16/17 19:42	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-15
Client ID: 6B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 75%

Date Collected: 06/02/17 09:42
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	479		mg/kg	2.65	--	1	06/13/17 20:06	06/16/17 19:46	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-16
Client ID: 1C
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 06/02/17 08:45
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	132		mg/kg	2.11	--	1	06/13/17 20:06	06/16/17 19:51	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-17
Client ID: 18B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 92%

Date Collected: 06/02/17 12:06
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	36.4		mg/kg	0.425	--	1	06/13/17 20:06	06/16/17 20:14	EPA 3050B	1,6010C	AB
Lead, Total	296		mg/kg	2.12	--	1	06/13/17 20:06	06/16/17 20:14	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-18
Client ID: 34A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 58%

Date Collected: 06/02/17 14:45
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1110		mg/kg	3.44	--	1	06/13/17 20:06	06/16/17 20:19	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-19
Client ID: 22A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 86%

Date Collected: 06/02/17 12:30
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	15.5		mg/kg	0.448	--	1	06/13/17 20:06	06/16/17 20:28	EPA 3050B	1,6010C	AB
Lead, Total	565		mg/kg	2.24	--	1	06/13/17 20:06	06/16/17 20:28	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-20
Client ID: 8B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 84%

Date Collected: 06/02/17 09:57
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	22.3		mg/kg	0.458	--	1	06/13/17 20:06	06/16/17 20:32	EPA 3050B	1,6010C	AB
Lead, Total	293		mg/kg	2.29	--	1	06/13/17 20:06	06/16/17 20:32	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-21
Client ID: 4D
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 92%

Date Collected: 06/02/17 09:21
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	7.09		mg/kg	0.425	--	1	06/13/17 21:37	06/16/17 21:54	EPA 3050B	1,6010C	AB
Lead, Total	2020		mg/kg	2.12	--	1	06/13/17 21:37	06/16/17 21:54	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-22
Client ID: 31B
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 56%

Date Collected: 06/02/17 14:18
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	68.8		mg/kg	0.696	--	1	06/13/17 21:37	06/16/17 22:12	EPA 3050B	1,6010C	AB
Lead, Total	12200		mg/kg	3.48	--	1	06/13/17 21:37	06/16/17 22:12	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-23
Client ID: 28E
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 87%

Date Collected: 06/02/17 13:48
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.9		mg/kg	0.453	--	1	06/13/17 21:37	06/16/17 22:55	EPA 3050B	1,6010C	AB
Lead, Total	1940		mg/kg	2.26	--	1	06/13/17 21:37	06/16/17 22:55	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-24
Client ID: 27A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 06/02/17 13:21
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	393		mg/kg	2.08	--	1	06/13/17 21:37	06/16/17 22:59	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-25
Client ID: 38 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 77%

Date Collected: 06/02/17 15:06
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	16.1		mg/kg	0.509	--	1	06/13/17 21:37	06/16/17 23:04	EPA 3050B	1,6010C	AB
Lead, Total	27.4		mg/kg	2.55	--	1	06/13/17 21:37	06/16/17 23:04	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-26
Client ID: 39 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 80%

Date Collected: 06/02/17 15:09
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	8.82		mg/kg	0.498	--	1	06/13/17 21:37	06/16/17 23:09	EPA 3050B	1,6010C	AB
Lead, Total	14.9		mg/kg	2.49	--	1	06/13/17 21:37	06/16/17 23:09	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-27
Client ID: 40 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 71%

Date Collected: 06/02/17 15:12
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	13.6		mg/kg	0.553	--	1	06/13/17 21:37	06/16/17 23:37	EPA 3050B	1,6010C	AB
Lead, Total	27.5		mg/kg	2.77	--	1	06/13/17 21:37	06/16/17 23:37	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-28
Client ID: 41 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 82%

Date Collected: 06/02/17 15:15
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	8.98		mg/kg	0.468	--	1	06/13/17 21:37	06/16/17 23:42	EPA 3050B	1,6010C	AB
Lead, Total	9.00		mg/kg	2.34	--	1	06/13/17 21:37	06/16/17 23:42	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1719516
Project Number: 171.05010
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-29
Client ID: 37 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 77%

Date Collected: 06/02/17 15:03
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	6.22		mg/kg	0.496	--	1	06/13/17 21:37	06/16/17 23:47	EPA 3050B	1,6010C	AB
Lead, Total	23.6		mg/kg	2.48	--	1	06/13/17 21:37	06/16/17 23:47	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-30
Client ID: 29A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 51%

Date Collected: 06/02/17 13:54
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	7.67		mg/kg	0.772	--	1	06/13/17 21:37	06/16/17 23:52	EPA 3050B	1,6010C	AB
Lead, Total	29.7		mg/kg	3.86	--	1	06/13/17 21:37	06/16/17 23:52	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-31
Client ID: 23D
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 85%

Date Collected: 06/02/17 12:54
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	13.2		mg/kg	0.446	--	1	06/13/17 21:37	06/16/17 23:56	EPA 3050B	1,6010C	AB
Lead, Total	41.5		mg/kg	2.23	--	1	06/13/17 21:37	06/16/17 23:56	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-20 Batch: WG1012742-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	06/13/17 20:06	06/16/17 18:17	1,6010C	AB
Lead, Total	ND		mg/kg	2.00	--	1	06/13/17 20:06	06/16/17 18:17	1,6010C	AB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21-31 Batch: WG1012754-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	06/13/17 21:37	06/16/17 21:44	1,6010C	AB
Lead, Total	ND		mg/kg	2.00	--	1	06/13/17 21:37	06/16/17 21:44	1,6010C	AB

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1719516

Report Date: 08/08/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 Batch: WG1012742-2 SRM Lot Number: D093-540								
Arsenic, Total	100		-		70-130	-		
Lead, Total	104		-		82-117	-		
Total Metals - Mansfield Lab Associated sample(s): 21-31 Batch: WG1012754-2 SRM Lot Number: D093-540								
Arsenic, Total	96		-		70-130	-		
Lead, Total	101		-		82-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1012742-3 QC Sample: L1719516-01 Client ID: 23B												
Arsenic, Total	13.4	10.7	24.7	106		-	-		75-125	-		20
Lead, Total	35.1	45.4	69.7	76		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 21-31 QC Batch ID: WG1012754-3 QC Sample: L1719516-21 Client ID: 4D												
Arsenic, Total	7.09	10.4	17.5	100		-	-		75-125	-		20
Lead, Total	2020	44.2	2880	**1950**	Q	-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1012742-4 QC Sample: L1719516-01 Client ID: 23B						
Lead, Total	35.1	33.3	mg/kg	5		20
Total Metals - Mansfield Lab Associated sample(s): 21-31 QC Batch ID: WG1012754-4 QC Sample: L1719516-21 Client ID: 4D						
Arsenic, Total	7.09	7.21	mg/kg	2		20
Lead, Total	2020	2300	mg/kg	13		20

INORGANICS
&
MISCELLANEOUS

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-01
Client ID: 23B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 12:48
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.0		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-02
Client ID: 21B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 12:27
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.7		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-03
Client ID: 16B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 11:48
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.3		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-04
Client ID: 5D
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 09:36
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.6		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-05
Client ID: 34C
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 14:51
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.8		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-06
Client ID: 29B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 13:57
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.8		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-07
Client ID: 24A
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 12:57
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.2		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-08
Client ID: 15B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 11:42
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.4		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-09
Client ID: 3B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 09:09
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.8		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-10
Client ID: 9A
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 10:09
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.9		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-11
Client ID: 26B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 13:15
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.2		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-12
Client ID: 14C
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 11:33
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.3		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-13
Client ID: 17C
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 11:57
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.9		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-14
Client ID: 10A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/02/17 10:15
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.2		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-15
Client ID: 6B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 09:42
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.9		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-16
Client ID: 1C
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/02/17 08:45
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.7		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-17
Client ID: 18B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 12:06
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.2		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-18
Client ID: 34A
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/02/17 14:45
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	57.6		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-19
Client ID: 22A
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 12:30
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.4		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-20
Client ID: 8B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 09:57
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.3		%	0.100	NA	1	-	06/13/17 11:03	121,2540G	DM

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-21
Client ID: 4D
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 09:21
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.6		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-22
Client ID: 31B
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 14:18
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	55.7		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-23
Client ID: 28E
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 13:48
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-24
Client ID: 27A
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 13:21
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.2		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-25
Client ID: 38 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 15:06
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.3		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-26
Client ID: 39 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 15:09
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.6		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-27
Client ID: 40 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 15:12
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.7		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-28
Client ID: 41 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/02/17 15:15
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.3		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-29
Client ID: 37 18-24"
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/02/17 15:03
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.0		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-30
Client ID: 29A
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 13:54
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	51.1		%	0.100	NA	1	-	06/13/17 11:37	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1719516-31
Client ID: 23D
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 06/02/17 12:54
Date Received: 06/12/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.1		%	0.100	NA	1	-	06/13/17 12:03	121,2540G	RI

Lab Duplicate Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-20 QC Batch ID: WG1012554-1 QC Sample: L1719516-01 Client ID: 23B						
Solids, Total	88.0	87.9	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 21-30 QC Batch ID: WG1012569-1 QC Sample: L1719507-01 Client ID: DUP Sample						
Solids, Total	89.1	89.9	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 31 QC Batch ID: WG1012589-1 QC Sample: L1719522-04 Client ID: DUP Sample						
Solids, Total	86.4	87.4	%	1		20

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1719516-01A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-02A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-03A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-04A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-05A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-06A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-07A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-08A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-09A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-10A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-11A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-12A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-13A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-14A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-15A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-16A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-17A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-18A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-19A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-20A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-21A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-22A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-23A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1719516
Report Date: 08/08/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1719516-24A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		TS(7),PB-TI(180)
L1719516-25A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-26A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-27A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-28A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-29A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-30A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)
L1719516-31A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),TS(7),PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name:	OSPREY LANDING	**Lab Number:**	L1719516
Project Number:	171.05010	**Report Date:**	08/08/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	OSPREY LANDING	**Lab Number:**	L1719516
Project Number:	171.05010	**Report Date:**	08/08/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1719516
Report Date: 08/08/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Serial_No:08081712:20

CHAIN OF CUSTODY

PAGE 1 OF 4

Date Rec'd in Lab: 6/12/17

ALPHA Job #: L1719516

ALPHA ANALYTICAL — World Class Chemistry

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth NH
Project #: 171.05010
Project Manager: Jay Johonnett
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☑ Same as Client info PO #: 10131

Client Information

Client: Ransom Consulting
Address: 112 Corporate Dr. Portsmouth NH
Phone: 603 436-1490
Email: jay.johonnett@ransomenv.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☑ No MA MCP Analytical Methods
☐ Yes ☑ No CT RCP Analytical Methods
☐ Yes ☑ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☑ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☑ No NPDES RGP
☑ Other State /Fed Program NHDES SRS Criteria

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

Hold all additional sample volume for possible additional analyses.

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 ☐ PP13; METALS: ☐ RCRA5 ☐ RCRA8; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Total Pb

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Pb	Sample Comments	TOTAL # BOTTLES
19516 - 01	23B	6/12/17	12:48	S	JPJ	X		1
02	21B	↓	12:27	↓	↓	X		1
03	16 B	↓	11:48	↓	↓	X		1
04	5 D	↓	9:36	↓	↓	X		1
05	34 C	↓	14:51	↓	↓	X		1
06	29 B	↓	13:57	↓	↓	X		1
07	24 A	↓	12:57	↓	↓	X		1
08	15 B	↓	11:42	↓	↓	X		1
09	3 B	↓	9:09	↓	↓	X		1
10	9 A	↓	10:09	↓	↓	X		1
					Container Type	A		
					Preservative	A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	6/12/17/14:55	Jessica J. Wagner AAL	6/12/17 1455
Jessica J. Wagner	6/12/17 2030	Rob Maesto	6/12/17 2030
Rob Maesto	6/12/17 2225	[signature]	6/12/17 2225

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 2 OF 4

Date Rec'd in Lab: 6/12/17

ALPHA Job #: L1719516

ALPHA ANALYTICAL World Class Chemistry
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth NH
Project #: 171.05016
Project Manager: Jay Johonnett
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #: 16131

Client Information

Client: Ransom Consulting
Address: 112 Corporate Dr, Portsmouth NH
Phone: 603 436-1490
Email: jay.johonnett@ransomenv.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods
☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☒ Other State /Fed Program NHDES SRS Criteria

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 ☐ PP13; METALS: ☐ RCRA5 ☐ RCRA8; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Total Pb

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Pb	Sample Comments	TOTAL # BOTTLES
19516-11	26 B	6/2/17	13:16	S	JPJ	X		1
12	14 C	↓	11:33	↓	↓	X		1
13	17 C	↓	11:57	↓	↓	X		1
14	10 A	↓	10:15	↓	↓	X		1
15	6 B	↓	9:42	↓	↓	X		1
16	1 C	↓	8:45	↓	↓	X		1
17	18 B	↓	12:06	↓	↓	X		1
18	34 A	↓	14:45	↓	↓	X		1
19	22 A	↓	12:30	↓	↓	X		1
20	8 B	↓	9:57	↓	↓	X		1
					Container Type	A		
					Preservative	A		

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	6/12/17 14:55	Jessica J. Wagner AAL	6/12/17 1455
Jessica J. Wagner	6/12/17 2030	Rob Maurio AAL	6/12/17 2030
Rob Maurio	6/12/17 22:25	[signature]	6/12/17 2225

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 3 OF 4

ALPHA ANALYTICAL
Mission Class Chemistry
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 6/12/17

ALPHA Job #: L1719516

Client Information

Client: Ransom Consulting
Address: 117 Corporate Dr. Portsmouth NH
Phone: 603 436-1490
Email: jay.johnnett@ransomenv.com

Additional Project Information:

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth NH
Project #: 171.05010
Project Manager: Jay Johnnett
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #: 10131

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Total Pb
Total As

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Pb	Total As	Sample Comments	TOTAL # BOTTLES
19516 - 21	4 D	6/12/17	9:21	S	JPJ	X			1
22	31 B		14:14			X			1
23	28 E		13:48			X			1
24	27 A		13:21			X			1
25	38 18-24"		15:06			X	X		1
26	39 18-24"		15:09			X	X		1
27	40 18-24"		15:12			X	X		1
28	41 18-24"		15:15			X	X		1
29	37 18-24		15:03			X	X		1
30	29A		13:54			X	X		1
	Container Type					A	A		
	Preservative					A	A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	6/12/17 14:45	Jessica L. Wagner AAL	6/12/17 1455
Jessica L. Wagner	6/12/17 20:30	Rob Mauto AAL	6/12/17 2030
Rob Mauto	6/12/17 2225		6/12/17 2225

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Serial_No:08081712:20

CHAIN OF CUSTODY

PAGE 4 OF 4

ALPHA ANALYTICAL — World Class Chemistry

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 6/12/17

ALPHA Job #: L1719516

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth NH
Project #: 171.05010
Project Manager: Jay Johonnett
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☑ Same as Client info PO #: 10131

Client Information

Client: Ransom
Address: 112 Corporate Dr. Portsmouth NH
Phone: 603 436-1490
Email: jay.johonnett@ransomenv.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☑ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☑ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☑ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☑ No NPDES RGP
☑ Other State /Fed Program NHDES Criteria

Turn-Around Time

☑ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due:

Additional Project Information:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Total Pb; Total As

SAMPLE INFO — *Filtration* ☐ Field ☐ Lab to do; *Preservation* ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Pb	Total As	Sample Comments	TOTAL # BOTTLES
19516 -31	23D	6/12/17	12:54	S	JRJ	X	X		1
						X			1
Container Type						A	A		
Preservative						A	A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	6/12/17 /14:55	Jessica J. Wagner AAL	6/12/17 1455
Jessica J. Wagner	6/12/17 2030	Rob Macato	6/12/17 20:30
Rob Macato	6/12/17 /22:25	[signature]	6/12/17 2225

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1721356
Client:	Ransom Consulting, Inc. 112 Corporate Drive Pease International Tradeport Portsmouth, NH 03801
ATTN:	Jay Johonnett
Phone:	(603) 436-1490
Project Name:	OSPREY LANDING
Project Number:	171.05010
Report Date:	06/29/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1721356
Report Date: 06/29/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1721356-01	CS 4	SOIL	PORTSMOUTH, NH	06/21/17 09:12	06/22/17
L1721356-02	CS 5	SOIL	PORTSMOUTH, NH	06/21/17 09:27	06/22/17
L1721356-03	CS 8	SOIL	PORTSMOUTH, NH	06/21/17 09:54	06/22/17
L1721356-04	CS 10	SOIL	PORTSMOUTH, NH	06/21/17 10:15	06/22/17
L1721356-05	CS 17	SOIL	PORTSMOUTH, NH	06/21/17 11:51	06/22/17
L1721356-06	CS 22	SOIL	PORTSMOUTH, NH	06/21/17 12:30	06/22/17
L1721356-07	CS 26	SOIL	PORTSMOUTH, NH	06/21/17 13:12	06/22/17
L1721356-08	CS 28	SOIL	PORTSMOUTH, NH	06/21/17 13:36	06/22/17
L1721356-09	CS 31	SOIL	PORTSMOUTH, NH	06/21/17 14:15	06/22/17
L1721356-10	CS 33	SOIL	PORTSMOUTH, NH	06/21/17 14:39	06/22/17

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1721356
Report Date: 06/29/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kara Lindquist

Title: Technical Director/Representative Date: 06/29/17

METALS

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-01
Client ID: CS 4
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 09:12
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	9.00		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 21:11	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-02
Client ID: CS 5
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 09:27
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.520		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 22:21	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-03
Client ID: CS 8
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 09:54
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.545		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 22:34	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-04
Client ID: CS 10
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 10:15
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.628		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 22:38	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-05
Client ID: CS 17
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 11:51
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	ND		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 22:43	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-06
Client ID: CS 22
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 12:30
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	2.06		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 22:47	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1721356
Project Number: 171.05010
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-07
Client ID: CS 26
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 13:12
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	ND		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 22:51	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-08
Client ID: CS 28
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 13:36
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	5.32		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 22:56	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-09
Client ID: CS 31
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 14:15
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	10.3		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 23:00	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

SAMPLE RESULTS

Lab ID: L1721356-10
Client ID: CS 33
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 06/21/17 14:39
Date Received: 06/22/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/24/17 17:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	ND		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 23:04	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1721356
Report Date: 06/29/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01-10 Batch: WG1017537-1										
Lead, TCLP	ND		mg/l	0.500	--	1	06/27/17 15:50	06/28/17 20:54	1,6010C	AB

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 06/24/17 17:26

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1721356

Report Date: 06/29/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-10 Batch: WG1017537-2								
Lead, TCLP	100		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1721356
Report Date: 06/29/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1017537-3 QC Sample: L1721356-01 Client ID: CS 4												
Lead, TCLP	9.00	5.1	14.7	112		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1721356
Report Date: 06/29/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1017537-4 QC Sample: L1721356-01 Client ID: CS 4						
Lead, TCLP	9.00	9.50	mg/l	5		20

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1721356
Report Date: 06/29/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1721356-01A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-01B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-01X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-01X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-02A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-02B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-02X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-02X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-03A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-03B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-03X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-03X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-04A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-04B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-04X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-04X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-05A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-05B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-05X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-05X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-06A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-06B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-06X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)

*Values in parentheses indicate holding time in days

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1721356
Report Date: 06/29/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1721356-06X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-07A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-07B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-07X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-07X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-08A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-08B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-08X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-08X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-09A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-09B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-09X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-09X9	Tumble Vessel	A	NA		4.0	Y	Absent		-
L1721356-10A	Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		-
L1721356-10B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1721356-10X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.0	Y	Absent		PB-CI(180)
L1721356-10X9	Tumble Vessel	A	NA		4.0	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name:	OSPREY LANDING	**Lab Number:**	L1721356
Project Number:	171.05010	**Report Date:**	06/29/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	OSPREY LANDING	**Lab Number:**	L1721356
Project Number:	171.05010	**Report Date:**	06/29/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1721356
Report Date: 06/29/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 6/22/17

ALPHA Job #: L1721356 EO 6/23/17 (L1721350)

ALPHA ANALYTICAL — World Class Chemistry
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: Ransom Consulting
Address: 117 Corporate Drive, Portsmouth, NH
Phone: 603 436-1490
Email: jay.johannett@ransomenv.com

Additional Project Information:

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth NH
Project #: 171.05010
Project Manager: Jay Johannett
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #: 10165

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods
☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☒ Other State /Fed Program NHDES SRPS Criteria

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	TCLP Pb	Sample Comments	TOTAL # BOTTLES
21350 01	CS 4	6/2/17	9:17	S	JPJ	X		2
21352 02	CS 5	6/2/17	9:27	S	JPJ	X		2
03	CS 8	6/2/17	9:54	S	JPJ	X		2
04	CS 10	6/2/17	10:15	S	JPJ	X		2
05	CS 17	6/2/17	11:51	S	JPJ	X		2
06	CS 22	6/2/17	12:30	S	JPJ	X		2
07	CS 26	6/2/17	13:12	S	JPJ	X		2
08	CS 28	6/2/17	13:36	S	JPJ	X		2
09	CS 31	6/2/17	14:15	S	JPJ	X		2
10	CS 33	6/2/17	14:39	S	JPJ	X		2
					Container Type	A		
					Preservative	A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	6/22/17 14:20	Jessica L. Wagner AAL	6/22/17 1420
Jessica L. Wagner	6/22/17 1530		6/22/17 1530
			6/23/17 14:07

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

APPENDIX C

Waste Characterization Laboratory Report

Remedial Action Plan
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

Ransom Consulting, Inc.
Project 171.05010

ANALYTICAL REPORT

Lab Number:	L1726925
Client:	Ransom Consulting, Inc. 112 Corporate Drive Pease International Tradeport Portsmouth, NH 03801
ATTN:	Jay Johonnett
Phone:	(603) 436-1490
Project Name:	OSPREY LANDING
Project Number:	171.05010
Report Date:	08/10/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726925-01	WC1	SOIL	PORTSMOUTH, NH	08/03/17 09:30	08/03/17
L1726925-02	WC2	SOIL	PORTSMOUTH, NH	08/03/17 09:40	08/03/17
L1726925-03	WC3	SOIL	PORTSMOUTH, NH	08/03/17 09:50	08/03/17
L1726925-04	WC4	SOIL	PORTSMOUTH, NH	08/03/17 10:00	08/03/17

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Case Narrative (continued)

Sample Receipt

At the client's request, TCLP Lead was added to sample L1726925 "WC2".

Semivolatile Organics

The WG1029375-2/-3 LCS/LCSD recoveries, associated with L1726925-01 through -04, are below the acceptance criteria for benzoic acid (0%/0%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

Herbicides

The WG1029358-3 LCSD recoveries, associated with L1726925-01 through -04, are below the acceptance criteria for dinoseb (9%); however, the recoveries are due to a noted method interference caused by the hydrolysis step of the extraction procedure. The results of the associated samples are reported; however, all results are considered to have a potentially low bias for this compound.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kara Lindquist

Title: Technical Director/Representative Date: 08/10/17

ORGANICS

VOLATILES

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/17 00:05
Analyst: MV
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	13	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	1.9	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	4.4	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	1.3	--	1
Chlorobenzene	ND		ug/kg	1.3	--	1
Trichlorofluoromethane	ND		ug/kg	6.3	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.3	--	1
Bromodichloromethane	ND		ug/kg	1.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.3	--	1
1,1-Dichloropropene	ND		ug/kg	6.3	--	1
Bromoform	ND		ug/kg	5.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Benzene	ND		ug/kg	1.3	--	1
Toluene	ND		ug/kg	1.9	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	6.3	--	1
Bromomethane	ND		ug/kg	2.5	--	1
Vinyl chloride	ND		ug/kg	2.5	--	1
Chloroethane	ND		ug/kg	2.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
Trichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	6.3	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 Date Collected: 08/03/17 09:30

Client ID: WC1 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	6.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	6.3	--	1
Methyl tert butyl ether	ND		ug/kg	2.5	--	1
p/m-Xylene	ND		ug/kg	2.5	--	1
o-Xylene	ND		ug/kg	2.5	--	1
Xylenes, Total	ND		ug/kg	2.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	13	--	1
1,2,3-Trichloropropane	ND		ug/kg	13	--	1
Styrene	ND		ug/kg	2.5	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	46	--	1
Carbon disulfide	ND		ug/kg	13	--	1
2-Butanone	ND		ug/kg	13	--	1
4-Methyl-2-pentanone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	6.3	--	1
Tetrahydrofuran	ND		ug/kg	25	--	1
2,2-Dichloropropane	ND		ug/kg	6.3	--	1
1,2-Dibromoethane	ND		ug/kg	5.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Bromobenzene	ND		ug/kg	6.3	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	6.3	--	1
1,3,5-Trichlorobenzene	ND		ug/kg	5.1	--	1
o-Chlorotoluene	ND		ug/kg	6.3	--	1
p-Chlorotoluene	ND		ug/kg	6.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.3	--	1
Hexachlorobutadiene	ND		ug/kg	6.3	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	6.3	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	6.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	6.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	6.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	6.3	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Ethyl ether	ND		ug/kg	6.3	--	1
Isopropyl Ether	ND		ug/kg	5.1	--	1
Tert-Butyl Alcohol	ND		ug/kg	130	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.1	--	1
1,4-Dioxane	ND		ug/kg	51	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	111		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/17 00:32
Analyst: MV
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	7.4	--	1
1,1-Dichloroethane	ND		ug/kg	1.1	--	1
Chloroform	ND		ug/kg	1.1	--	1
Carbon tetrachloride	ND		ug/kg	0.74	--	1
1,2-Dichloropropane	ND		ug/kg	2.6	--	1
Dibromochloromethane	ND		ug/kg	0.74	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	--	1
Tetrachloroethene	ND		ug/kg	0.74	--	1
Chlorobenzene	ND		ug/kg	0.74	--	1
Trichlorofluoromethane	ND		ug/kg	3.7	--	1
1,2-Dichloroethane	ND		ug/kg	0.74	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.74	--	1
Bromodichloromethane	ND		ug/kg	0.74	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.74	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.74	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.74	--	1
1,1-Dichloropropene	ND		ug/kg	3.7	--	1
Bromoform	ND		ug/kg	3.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.74	--	1
Benzene	ND		ug/kg	0.74	--	1
Toluene	ND		ug/kg	1.1	--	1
Ethylbenzene	ND		ug/kg	0.74	--	1
Chloromethane	ND		ug/kg	3.7	--	1
Bromomethane	ND		ug/kg	1.5	--	1
Vinyl chloride	ND		ug/kg	1.5	--	1
Chloroethane	ND		ug/kg	1.5	--	1
1,1-Dichloroethene	ND		ug/kg	0.74	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
Trichloroethene	ND		ug/kg	0.74	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.7	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02 Date Collected: 08/03/17 09:40

Client ID: WC2 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.7	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.7	--	1
Methyl tert butyl ether	ND		ug/kg	1.5	--	1
p/m-Xylene	ND		ug/kg	1.5	--	1
o-Xylene	ND		ug/kg	1.5	--	1
Xylenes, Total	ND		ug/kg	1.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.74	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.74	--	1
Dibromomethane	ND		ug/kg	7.4	--	1
1,2,3-Trichloropropane	ND		ug/kg	7.4	--	1
Styrene	ND		ug/kg	1.5	--	1
Dichlorodifluoromethane	ND		ug/kg	7.4	--	1
Acetone	ND		ug/kg	27	--	1
Carbon disulfide	ND		ug/kg	7.4	--	1
2-Butanone	ND		ug/kg	7.4	--	1
4-Methyl-2-pentanone	ND		ug/kg	7.4	--	1
2-Hexanone	ND		ug/kg	7.4	--	1
Bromochloromethane	ND		ug/kg	3.7	--	1
Tetrahydrofuran	ND		ug/kg	15	--	1
2,2-Dichloropropane	ND		ug/kg	3.7	--	1
1,2-Dibromoethane	ND		ug/kg	3.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.74	--	1
Bromobenzene	ND		ug/kg	3.7	--	1
n-Butylbenzene	ND		ug/kg	0.74	--	1
sec-Butylbenzene	ND		ug/kg	0.74	--	1
tert-Butylbenzene	ND		ug/kg	3.7	--	1
1,3,5-Trichlorobenzene	ND		ug/kg	3.0	--	1
o-Chlorotoluene	ND		ug/kg	3.7	--	1
p-Chlorotoluene	ND		ug/kg	3.7	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.7	--	1
Hexachlorobutadiene	ND		ug/kg	3.7	--	1
Isopropylbenzene	ND		ug/kg	0.74	--	1
p-Isopropyltoluene	0.79		ug/kg	0.74	--	1
Naphthalene	ND		ug/kg	3.7	--	1
n-Propylbenzene	ND		ug/kg	0.74	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.7	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.7	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.7	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.7	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Ethyl ether	ND		ug/kg	3.7	--	1
Isopropyl Ether	ND		ug/kg	3.0	--	1
Tert-Butyl Alcohol	ND		ug/kg	74	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.0	--	1
1,4-Dioxane	ND		ug/kg	30	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	110		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/17 00:58
Analyst: MV
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	6.6	--	1
1,1-Dichloroethane	ND		ug/kg	0.99	--	1
Chloroform	ND		ug/kg	0.99	--	1
Carbon tetrachloride	ND		ug/kg	0.66	--	1
1,2-Dichloropropane	ND		ug/kg	2.3	--	1
Dibromochloromethane	ND		ug/kg	0.66	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.99	--	1
Tetrachloroethene	ND		ug/kg	0.66	--	1
Chlorobenzene	ND		ug/kg	0.66	--	1
Trichlorofluoromethane	ND		ug/kg	3.3	--	1
1,2-Dichloroethane	ND		ug/kg	0.66	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.66	--	1
Bromodichloromethane	ND		ug/kg	0.66	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.66	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.66	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.66	--	1
1,1-Dichloropropene	ND		ug/kg	3.3	--	1
Bromoform	ND		ug/kg	2.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.66	--	1
Benzene	ND		ug/kg	0.66	--	1
Toluene	ND		ug/kg	0.99	--	1
Ethylbenzene	ND		ug/kg	0.66	--	1
Chloromethane	ND		ug/kg	3.3	--	1
Bromomethane	ND		ug/kg	1.3	--	1
Vinyl chloride	ND		ug/kg	1.3	--	1
Chloroethane	ND		ug/kg	1.3	--	1
1,1-Dichloroethene	ND		ug/kg	0.66	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.99	--	1
Trichloroethene	ND		ug/kg	0.66	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.3	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03 Date Collected: 08/03/17 09:50

Client ID: WC3 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.3	--	1
Methyl tert butyl ether	ND		ug/kg	1.3	--	1
p/m-Xylene	ND		ug/kg	1.3	--	1
o-Xylene	ND		ug/kg	1.3	--	1
Xylenes, Total	ND		ug/kg	1.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.66	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.66	--	1
Dibromomethane	ND		ug/kg	6.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.6	--	1
Styrene	ND		ug/kg	1.3	--	1
Dichlorodifluoromethane	ND		ug/kg	6.6	--	1
Acetone	ND		ug/kg	24	--	1
Carbon disulfide	ND		ug/kg	6.6	--	1
2-Butanone	ND		ug/kg	6.6	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.6	--	1
2-Hexanone	ND		ug/kg	6.6	--	1
Bromochloromethane	ND		ug/kg	3.3	--	1
Tetrahydrofuran	ND		ug/kg	13	--	1
2,2-Dichloropropane	ND		ug/kg	3.3	--	1
1,2-Dibromoethane	ND		ug/kg	2.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.66	--	1
Bromobenzene	ND		ug/kg	3.3	--	1
n-Butylbenzene	ND		ug/kg	0.66	--	1
sec-Butylbenzene	ND		ug/kg	0.66	--	1
tert-Butylbenzene	ND		ug/kg	3.3	--	1
1,3,5-Trichlorobenzene	ND		ug/kg	2.6	--	1
o-Chlorotoluene	ND		ug/kg	3.3	--	1
p-Chlorotoluene	ND		ug/kg	3.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.3	--	1
Hexachlorobutadiene	ND		ug/kg	3.3	--	1
Isopropylbenzene	ND		ug/kg	0.66	--	1
p-Isopropyltoluene	ND		ug/kg	0.66	--	1
Naphthalene	ND		ug/kg	3.3	--	1
n-Propylbenzene	ND		ug/kg	0.66	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.3	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Ethyl ether	ND		ug/kg	3.3	--	1
Isopropyl Ether	ND		ug/kg	2.6	--	1
Tert-Butyl Alcohol	ND		ug/kg	66	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.6	--	1
1,4-Dioxane	ND		ug/kg	26	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	111		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/17 12:43
Analyst: CBN
Percent Solids: 98%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	6.0	--	1
1,1-Dichloroethane	ND		ug/kg	0.89	--	1
Chloroform	ND		ug/kg	0.89	--	1
Carbon tetrachloride	ND		ug/kg	0.60	--	1
1,2-Dichloropropane	ND		ug/kg	2.1	--	1
Dibromochloromethane	ND		ug/kg	0.60	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.89	--	1
Tetrachloroethene	ND		ug/kg	0.60	--	1
Chlorobenzene	ND		ug/kg	0.60	--	1
Trichlorofluoromethane	ND		ug/kg	3.0	--	1
1,2-Dichloroethane	ND		ug/kg	0.60	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.60	--	1
Bromodichloromethane	ND		ug/kg	0.60	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.60	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.60	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.60	--	1
1,1-Dichloropropene	ND		ug/kg	3.0	--	1
Bromoform	ND		ug/kg	2.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.60	--	1
Benzene	ND		ug/kg	0.60	--	1
Toluene	ND		ug/kg	0.89	--	1
Ethylbenzene	ND		ug/kg	0.60	--	1
Chloromethane	ND		ug/kg	3.0	--	1
Bromomethane	ND		ug/kg	1.2	--	1
Vinyl chloride	ND		ug/kg	1.2	--	1
Chloroethane	ND		ug/kg	1.2	--	1
1,1-Dichloroethene	ND		ug/kg	0.60	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.89	--	1
Trichloroethene	ND		ug/kg	0.60	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.0	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04 Date Collected: 08/03/17 10:00

Client ID: WC4 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.0	--	1
Methyl tert butyl ether	ND		ug/kg	1.2	--	1
p/m-Xylene	ND		ug/kg	1.2	--	1
o-Xylene	ND		ug/kg	1.2	--	1
Xylenes, Total	ND		ug/kg	1.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.60	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.60	--	1
Dibromomethane	ND		ug/kg	6.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.0	--	1
Styrene	ND		ug/kg	1.2	--	1
Dichlorodifluoromethane	ND		ug/kg	6.0	--	1
Acetone	ND		ug/kg	21	--	1
Carbon disulfide	ND		ug/kg	6.0	--	1
2-Butanone	ND		ug/kg	6.0	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.0	--	1
2-Hexanone	ND		ug/kg	6.0	--	1
Bromochloromethane	ND		ug/kg	3.0	--	1
Tetrahydrofuran	ND		ug/kg	12	--	1
2,2-Dichloropropane	ND		ug/kg	3.0	--	1
1,2-Dibromoethane	ND		ug/kg	2.4	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.60	--	1
Bromobenzene	ND		ug/kg	3.0	--	1
n-Butylbenzene	ND		ug/kg	0.60	--	1
sec-Butylbenzene	ND		ug/kg	0.60	--	1
tert-Butylbenzene	ND		ug/kg	3.0	--	1
1,3,5-Trichlorobenzene	ND		ug/kg	2.4	--	1
o-Chlorotoluene	ND		ug/kg	3.0	--	1
p-Chlorotoluene	ND		ug/kg	3.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--	1
Hexachlorobutadiene	ND		ug/kg	3.0	--	1
Isopropylbenzene	ND		ug/kg	0.60	--	1
p-Isopropyltoluene	ND		ug/kg	0.60	--	1
Naphthalene	ND		ug/kg	3.0	--	1
n-Propylbenzene	ND		ug/kg	0.60	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.0	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Ethyl ether	3.2		ug/kg	3.0	--	1
Isopropyl Ether	ND		ug/kg	2.4	--	1
Tert-Butyl Alcohol	ND		ug/kg	60	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.4	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.4	--	1
1,4-Dioxane	ND		ug/kg	24	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	104		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/09/17 23:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 01-03 Batch: WG1030739-5					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	5.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	5.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	5.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/09/17 23:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 01-03 Batch: WG1030739-5					
1,2-Dichlorobenzene	ND		ug/kg	5.0	--
1,3-Dichlorobenzene	ND		ug/kg	5.0	--
1,4-Dichlorobenzene	ND		ug/kg	5.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	10	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	5.0	--
Tetrahydrofuran	ND		ug/kg	20	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	5.0	--
1,3,5-Trichlorobenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	5.0	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/09/17 23:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 01-03 Batch: WG1030739-5					
p-Chlorotoluene	ND		ug/kg	5.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.0	--
Hexachlorobutadiene	ND		ug/kg	5.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	5.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	5.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	5.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Tert-Butyl Alcohol	ND		ug/kg	100	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	107		70-130

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/17 10:02
Analyst: CBN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 04 Batch: WG1030773-5					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	5.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	5.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	5.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/17 10:02
Analyst: CBN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 04 Batch: WG1030773-5					
1,2-Dichlorobenzene	ND		ug/kg	5.0	--
1,3-Dichlorobenzene	ND		ug/kg	5.0	--
1,4-Dichlorobenzene	ND		ug/kg	5.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	10	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	5.0	--
Tetrahydrofuran	ND		ug/kg	20	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	5.0	--
1,3,5-Trichlorobenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	5.0	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/17 10:02
Analyst: CBN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 04 Batch: WG1030773-5					
p-Chlorotoluene	ND		ug/kg	5.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.0	--
Hexachlorobutadiene	ND		ug/kg	5.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	5.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	5.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	5.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Tert-Butyl Alcohol	ND		ug/kg	100	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG1030739-3 WG1030739-4								
Methylene chloride	105		101		70-130	4		30
1,1-Dichloroethane	113		111		70-130	2		30
Chloroform	115		112		70-130	3		30
Carbon tetrachloride	**131**	Q	130		70-130	1		30
1,2-Dichloropropane	111		107		70-130	4		30
Dibromochloromethane	99		99		70-130	0		30
1,1,2-Trichloroethane	96		92		70-130	4		30
Tetrachloroethene	103		99		70-130	4		30
Chlorobenzene	98		95		70-130	3		30
Trichlorofluoromethane	134		131		70-139	2		30
1,2-Dichloroethane	121		121		70-130	0		30
1,1,1-Trichloroethane	124		120		70-130	3		30
Bromodichloromethane	114		111		70-130	3		30
trans-1,3-Dichloropropene	101		100		70-130	1		30
cis-1,3-Dichloropropene	104		103		70-130	1		30
1,1-Dichloropropene	118		111		70-130	6		30
Bromoform	90		89		70-130	1		30
1,1,2,2-Tetrachloroethane	86		87		70-130	1		30
Benzene	107		104		70-130	3		30
Toluene	99		98		70-130	1		30
Ethylbenzene	102		99		70-130	3		30
Chloromethane	126		120		52-130	5		30
Bromomethane	115		117		57-147	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG1030739-3 WG1030739-4								
Vinyl chloride	**145**	Q	**135**	Q	67-130	7		30
Chloroethane	120		113		50-151	6		30
1,1-Dichloroethene	97		104		65-135	7		30
trans-1,2-Dichloroethene	107		102		70-130	5		30
Trichloroethene	115		112		70-130	3		30
1,2-Dichlorobenzene	96		92		70-130	4		30
1,3-Dichlorobenzene	93		92		70-130	1		30
1,4-Dichlorobenzene	96		88		70-130	9		30
Methyl tert butyl ether	80		**65**	Q	66-130	21		30
p/m-Xylene	101		96		70-130	5		30
o-Xylene	99		96		70-130	3		30
cis-1,2-Dichloroethene	106		104		70-130	2		30
Dibromomethane	107		104		70-130	3		30
1,2,3-Trichloropropane	95		93		68-130	2		30
Styrene	99		94		70-130	5		30
Dichlorodifluoromethane	134		122		30-146	9		30
Acetone	118		118		54-140	0		30
Carbon disulfide	66		69		59-130	4		30
2-Butanone	105		98		70-130	7		30
4-Methyl-2-pentanone	96		96		70-130	0		30
2-Hexanone	102		100		70-130	2		30
Bromochloromethane	105		103		70-130	2		30
Tetrahydrofuran	111		126		66-130	13		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG1030739-3 WG1030739-4								
2,2-Dichloropropane	120		115		70-130	4		30
1,2-Dibromoethane	96		95		70-130	1		30
1,1,1,2-Tetrachloroethane	101		98		70-130	3		30
Bromobenzene	96		93		70-130	3		30
n-Butylbenzene	107		96		70-130	11		30
sec-Butylbenzene	99		99		70-130	0		30
tert-Butylbenzene	101		95		70-130	6		30
1,3,5-Trichlorobenzene	100		97		70-139	3		30
o-Chlorotoluene	99		96		70-130	3		30
p-Chlorotoluene	101		99		70-130	2		30
1,2-Dibromo-3-chloropropane	82		82		68-130	0		30
Hexachlorobutadiene	104		99		67-130	5		30
Isopropylbenzene	104		98		70-130	6		30
p-Isopropyltoluene	101		98		70-130	3		30
Naphthalene	91		88		70-130	3		30
n-Propylbenzene	104		96		70-130	8		30
1,2,3-Trichlorobenzene	94		91		70-130	3		30
1,2,4-Trichlorobenzene	96		93		70-130	3		30
1,3,5-Trimethylbenzene	104		101		70-130	3		30
1,2,4-Trimethylbenzene	103		98		70-130	5		30
Ethyl ether	107		102		67-130	5		30
Isopropyl Ether	121		118		66-130	3		30
Tert-Butyl Alcohol	119		115		70-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG1030739-3 WG1030739-4								
Ethyl-Tert-Butyl-Ether	108		100		70-130	8		30
Tertiary-Amyl Methyl Ether	106		101		70-130	5		30
1,4-Dioxane	90		91		65-136	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	117		115		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	109		104		70-130
Dibromofluoromethane	109		107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 04 Batch: WG1030773-3 WG1030773-4								
Methylene chloride	100		100		70-130	0		30
1,1-Dichloroethane	112		107		70-130	5		30
Chloroform	112		109		70-130	3		30
Carbon tetrachloride	129		122		70-130	6		30
1,2-Dichloropropane	114		108		70-130	5		30
Dibromochloromethane	97		93		70-130	4		30
1,1,2-Trichloroethane	96		94		70-130	2		30
Tetrachloroethene	105		97		70-130	8		30
Chlorobenzene	100		94		70-130	6		30
Trichlorofluoromethane	135		124		70-139	8		30
1,2-Dichloroethane	114		109		70-130	4		30
1,1,1-Trichloroethane	122		116		70-130	5		30
Bromodichloromethane	113		109		70-130	4		30
trans-1,3-Dichloropropene	100		97		70-130	3		30
cis-1,3-Dichloropropene	107		102		70-130	5		30
1,1-Dichloropropene	119		113		70-130	5		30
Bromoform	87		88		70-130	1		30
1,1,2,2-Tetrachloroethane	89		88		70-130	1		30
Benzene	112		107		70-130	5		30
Toluene	103		97		70-130	6		30
Ethylbenzene	104		97		70-130	7		30
Chloromethane	117		114		52-130	3		30
Bromomethane	125		120		57-147	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 04 Batch: WG1030773-3 WG1030773-4								
Vinyl chloride	**132**	Q	**138**	Q	67-130	4		30
Chloroethane	122		117		50-151	4		30
1,1-Dichloroethene	111		107		65-135	4		30
trans-1,2-Dichloroethene	109		105		70-130	4		30
Trichloroethene	117		110		70-130	6		30
1,2-Dichlorobenzene	96		92		70-130	4		30
1,3-Dichlorobenzene	97		93		70-130	4		30
1,4-Dichlorobenzene	95		90		70-130	5		30
Methyl tert butyl ether	**65**	Q	68		66-130	5		30
p/m-Xylene	102		97		70-130	5		30
o-Xylene	100		94		70-130	6		30
cis-1,2-Dichloroethene	108		103		70-130	5		30
Dibromomethane	105		104		70-130	1		30
1,2,3-Trichloropropane	92		94		68-130	2		30
Styrene	99		93		70-130	6		30
Dichlorodifluoromethane	143		140		30-146	2		30
Acetone	106		106		54-140	0		30
Carbon disulfide	75		75		59-130	0		30
2-Butanone	90		89		70-130	1		30
4-Methyl-2-pentanone	98		93		70-130	5		30
2-Hexanone	96		93		70-130	3		30
Bromochloromethane	106		100		70-130	6		30
Tetrahydrofuran	118		101		66-130	16		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 04 Batch: WG1030773-3 WG1030773-4								
2,2-Dichloropropane	118		111		70-130	6		30
1,2-Dibromoethane	94		93		70-130	1		30
1,1,1,2-Tetrachloroethane	97		95		70-130	2		30
Bromobenzene	94		92		70-130	2		30
n-Butylbenzene	104		101		70-130	3		30
sec-Butylbenzene	105		101		70-130	4		30
tert-Butylbenzene	102		99		70-130	3		30
1,3,5-Trichlorobenzene	98		96		70-139	2		30
o-Chlorotoluene	101		98		70-130	3		30
p-Chlorotoluene	103		99		70-130	4		30
1,2-Dibromo-3-chloropropane	76		84		68-130	10		30
Hexachlorobutadiene	102		98		67-130	4		30
Isopropylbenzene	104		100		70-130	4		30
p-Isopropyltoluene	101		99		70-130	2		30
Naphthalene	89		88		70-130	1		30
n-Propylbenzene	105		100		70-130	5		30
1,2,3-Trichlorobenzene	93		90		70-130	3		30
1,2,4-Trichlorobenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	102		102		70-130	0		30
1,2,4-Trimethylbenzene	104		101		70-130	3		30
Ethyl ether	104		102		67-130	2		30
Isopropyl Ether	113		112		66-130	1		30
Tert-Butyl Alcohol	107		112		70-130	5		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 04 Batch: WG1030773-3 WG1030773-4								
Ethyl-Tert-Butyl-Ether	100		97		70-130	3		30
Tertiary-Amyl Methyl Ether	105		99		70-130	6		30
1,4-Dioxane	105		108		65-136	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		106		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	103		107		70-130
Dibromofluoromethane	104		104		70-130

SEMIVOLATILES

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 D2
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 12:45
Analyst: CB
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Fluoranthene	14000		ug/kg	1100	--	10
Phenanthrene	23000		ug/kg	1100	--	10
Pyrene	28000		ug/kg	1100	--	10

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 D
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 07:50
Analyst: RC
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	2800		ug/kg	300	--	2
Benzidine	ND		ug/kg	1200	--	2
1,2,4-Trichlorobenzene	ND		ug/kg	370	--	2
Hexachlorobenzene	ND		ug/kg	220	--	2
Bis(2-chloroethyl)ether	ND		ug/kg	330	--	2
2-Chloronaphthalene	ND		ug/kg	370	--	2
1,2-Dichlorobenzene	ND		ug/kg	370	--	2
1,3-Dichlorobenzene	ND		ug/kg	370	--	2
1,4-Dichlorobenzene	ND		ug/kg	370	--	2
3,3'-Dichlorobenzidine	ND		ug/kg	370	--	2
2,4-Dinitrotoluene	ND		ug/kg	370	--	2
2,6-Dinitrotoluene	ND		ug/kg	370	--	2
Azobenzene	ND		ug/kg	370	--	2
Fluoranthene	18000	E	ug/kg	220	--	2
4-Chlorophenyl phenyl ether	ND		ug/kg	370	--	2
4-Bromophenyl phenyl ether	ND		ug/kg	370	--	2
Bis(2-chloroisopropyl)ether	ND		ug/kg	440	--	2
Bis(2-chloroethoxy)methane	ND		ug/kg	400	--	2
Hexachlorobutadiene	ND		ug/kg	370	--	2
Hexachlorocyclopentadiene	ND		ug/kg	1000	--	2
Hexachloroethane	ND		ug/kg	300	--	2
Isophorone	ND		ug/kg	330	--	2
Naphthalene	780		ug/kg	370	--	2
Nitrobenzene	ND		ug/kg	330	--	2
NDPA/DPA	ND		ug/kg	300	--	2
n-Nitrosodi-n-propylamine	ND		ug/kg	370	--	2
Bis(2-ethylhexyl)phthalate	ND		ug/kg	370	--	2
Butyl benzyl phthalate	ND		ug/kg	370	--	2
Di-n-butylphthalate	ND		ug/kg	370	--	2
Di-n-octylphthalate	ND		ug/kg	370	--	2

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 D Date Collected: 08/03/17 09:30

Client ID: WC1 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	370	--	2
Dimethyl phthalate	ND		ug/kg	370	--	2
Benzo(a)anthracene	12000		ug/kg	220	--	2
Benzo(a)pyrene	13000		ug/kg	300	--	2
Benzo(b)fluoranthene	11000		ug/kg	220	--	2
Benzo(k)fluoranthene	2500		ug/kg	220	--	2
Chrysene	10000		ug/kg	220	--	2
Acenaphthylene	ND		ug/kg	300	--	2
Anthracene	6600		ug/kg	220	--	2
Benzo(ghi)perylene	6900		ug/kg	300	--	2
Fluorene	2300		ug/kg	370	--	2
Phenanthrene	28000	E	ug/kg	220	--	2
Dibenzo(a,h)anthracene	1400		ug/kg	220	--	2
Indeno(1,2,3-cd)pyrene	6100		ug/kg	300	--	2
Pyrene	37000	E	ug/kg	220	--	2
Biphenyl	ND		ug/kg	840	--	2
Aniline	ND		ug/kg	440	--	2
4-Chloroaniline	ND		ug/kg	370	--	2
1-Methylnaphthalene	1100		ug/kg	370	--	2
2-Nitroaniline	ND		ug/kg	370	--	2
3-Nitroaniline	ND		ug/kg	370	--	2
4-Nitroaniline	ND		ug/kg	370	--	2
Dibenzofuran	ND		ug/kg	370	--	2
2-Methylnaphthalene	980		ug/kg	440	--	2
n-Nitrosodimethylamine	ND		ug/kg	740	--	2
2,4,6-Trichlorophenol	ND		ug/kg	220	--	2
p-Chloro-m-cresol	ND		ug/kg	370	--	2
2-Chlorophenol	ND		ug/kg	370	--	2
2,4-Dichlorophenol	ND		ug/kg	330	--	2
2,4-Dimethylphenol	ND		ug/kg	370	--	2
2-Nitrophenol	ND		ug/kg	800	--	2
4-Nitrophenol	ND		ug/kg	520	--	2
2,4-Dinitrophenol	ND		ug/kg	1800	--	2
4,6-Dinitro-o-cresol	ND		ug/kg	960	--	2
Pentachlorophenol	ND		ug/kg	300	--	2
Phenol	ND		ug/kg	370	--	2
2-Methylphenol	ND		ug/kg	370	--	2
3-Methylphenol/4-Methylphenol	ND		ug/kg	530	--	2
2,4,5-Trichlorophenol	ND		ug/kg	370	--	2

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01 D
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	1200	--	2
Benzyl Alcohol	ND		ug/kg	370	--	2
Carbazole	ND		ug/kg	370	--	2
Pyridine	ND		ug/kg	400	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	73		30-120
2,4,6-Tribromophenol	82		10-136
4-Terphenyl-d14	78		18-120

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 05:57
Analyst: RC
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Benzidine	ND		ug/kg	580	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	--	1
Hexachlorobenzene	ND		ug/kg	110	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	--	1
2-Chloronaphthalene	ND		ug/kg	180	--	1
1,2-Dichlorobenzene	ND		ug/kg	180	--	1
1,3-Dichlorobenzene	ND		ug/kg	180	--	1
1,4-Dichlorobenzene	ND		ug/kg	180	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	--	1
2,4-Dinitrotoluene	ND		ug/kg	180	--	1
2,6-Dinitrotoluene	ND		ug/kg	180	--	1
Azobenzene	ND		ug/kg	180	--	1
Fluoranthene	180		ug/kg	110	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	--	1
Hexachlorobutadiene	ND		ug/kg	180	--	1
Hexachlorocyclopentadiene	ND		ug/kg	500	--	1
Hexachloroethane	ND		ug/kg	140	--	1
Isophorone	ND		ug/kg	160	--	1
Naphthalene	ND		ug/kg	180	--	1
Nitrobenzene	ND		ug/kg	160	--	1
NDPA/DPA	ND		ug/kg	140	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	--	1
Butyl benzyl phthalate	ND		ug/kg	180	--	1
Di-n-butylphthalate	ND		ug/kg	180	--	1
Di-n-octylphthalate	ND		ug/kg	180	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02 Date Collected: 08/03/17 09:40

Client ID: WC2 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	--	1
Dimethyl phthalate	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	130		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	120		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	230		ug/kg	110	--	1
Biphenyl	ND		ug/kg	400	--	1
Aniline	ND		ug/kg	210	--	1
4-Chloroaniline	ND		ug/kg	180	--	1
1-Methylnaphthalene	ND		ug/kg	180	--	1
2-Nitroaniline	ND		ug/kg	180	--	1
3-Nitroaniline	ND		ug/kg	180	--	1
4-Nitroaniline	ND		ug/kg	180	--	1
Dibenzofuran	ND		ug/kg	180	--	1
2-Methylnaphthalene	ND		ug/kg	210	--	1
n-Nitrosodimethylamine	ND		ug/kg	350	--	1
2,4,6-Trichlorophenol	ND		ug/kg	110	--	1
p-Chloro-m-cresol	ND		ug/kg	180	--	1
2-Chlorophenol	ND		ug/kg	180	--	1
2,4-Dichlorophenol	ND		ug/kg	160	--	1
2,4-Dimethylphenol	ND		ug/kg	180	--	1
2-Nitrophenol	ND		ug/kg	380	--	1
4-Nitrophenol	ND		ug/kg	250	--	1
2,4-Dinitrophenol	ND		ug/kg	850	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	--	1
Pentachlorophenol	ND		ug/kg	140	--	1
Phenol	ND		ug/kg	180	--	1
2-Methylphenol	ND		ug/kg	180	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	--	1
2,4,5-Trichlorophenol	ND		ug/kg	180	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	570	--	1
Benzyl Alcohol	ND		ug/kg	180	--	1
Carbazole	ND		ug/kg	180	--	1
Pyridine	ND		ug/kg	190	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	72		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	70		30-120
2,4,6-Tribromophenol	78		10-136
4-Terphenyl-d14	61		18-120

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 06:25
Analyst: RC
Percent Solids: 97%

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Benzidine	ND		ug/kg	560	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	--	1
Hexachlorobenzene	ND		ug/kg	100	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	150	--	1
2-Chloronaphthalene	ND		ug/kg	170	--	1
1,2-Dichlorobenzene	ND		ug/kg	170	--	1
1,3-Dichlorobenzene	ND		ug/kg	170	--	1
1,4-Dichlorobenzene	ND		ug/kg	170	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	--	1
2,4-Dinitrotoluene	ND		ug/kg	170	--	1
2,6-Dinitrotoluene	ND		ug/kg	170	--	1
Azobenzene	ND		ug/kg	170	--	1
Fluoranthene	490		ug/kg	100	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--	1
Hexachlorobutadiene	ND		ug/kg	170	--	1
Hexachlorocyclopentadiene	ND		ug/kg	480	--	1
Hexachloroethane	ND		ug/kg	140	--	1
Isophorone	ND		ug/kg	150	--	1
Naphthalene	ND		ug/kg	170	--	1
Nitrobenzene	ND		ug/kg	150	--	1
NDPA/DPA	ND		ug/kg	140	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	--	1
Butyl benzyl phthalate	ND		ug/kg	170	--	1
Di-n-butylphthalate	ND		ug/kg	170	--	1
Di-n-octylphthalate	ND		ug/kg	170	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03 Date Collected: 08/03/17 09:50

Client ID: WC3 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	170	--	1
Dimethyl phthalate	ND		ug/kg	170	--	1
Benzo(a)anthracene	310		ug/kg	100	--	1
Benzo(a)pyrene	340		ug/kg	140	--	1
Benzo(b)fluoranthene	310		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	290		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	100		ug/kg	100	--	1
Benzo(ghi)perylene	210		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	550		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	180		ug/kg	140	--	1
Pyrene	980		ug/kg	100	--	1
Biphenyl	ND		ug/kg	380	--	1
Aniline	ND		ug/kg	200	--	1
4-Chloroaniline	ND		ug/kg	170	--	1
1-Methylnaphthalene	ND		ug/kg	170	--	1
2-Nitroaniline	ND		ug/kg	170	--	1
3-Nitroaniline	ND		ug/kg	170	--	1
4-Nitroaniline	ND		ug/kg	170	--	1
Dibenzofuran	ND		ug/kg	170	--	1
2-Methylnaphthalene	ND		ug/kg	200	--	1
n-Nitrosodimethylamine	ND		ug/kg	340	--	1
2,4,6-Trichlorophenol	ND		ug/kg	100	--	1
p-Chloro-m-cresol	ND		ug/kg	170	--	1
2-Chlorophenol	ND		ug/kg	170	--	1
2,4-Dichlorophenol	ND		ug/kg	150	--	1
2,4-Dimethylphenol	ND		ug/kg	170	--	1
2-Nitrophenol	ND		ug/kg	360	--	1
4-Nitrophenol	ND		ug/kg	240	--	1
2,4-Dinitrophenol	ND		ug/kg	810	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	440	--	1
Pentachlorophenol	ND		ug/kg	140	--	1
Phenol	ND		ug/kg	170	--	1
2-Methylphenol	ND		ug/kg	170	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--	1
2,4,5-Trichlorophenol	ND		ug/kg	170	--	1

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	550	--	1
Benzyl Alcohol	ND		ug/kg	170	--	1
Carbazole	ND		ug/kg	170	--	1
Pyridine	ND		ug/kg	180	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	67		30-120
2,4,6-Tribromophenol	77		10-136
4-Terphenyl-d14	68		18-120

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/17 06:54
Analyst: RC
Percent Solids: 98%

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	130	--	1
Benzidine	ND		ug/kg	550	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	--	1
Hexachlorobenzene	ND		ug/kg	100	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	150	--	1
2-Chloronaphthalene	ND		ug/kg	170	--	1
1,2-Dichlorobenzene	ND		ug/kg	170	--	1
1,3-Dichlorobenzene	ND		ug/kg	170	--	1
1,4-Dichlorobenzene	ND		ug/kg	170	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	--	1
2,4-Dinitrotoluene	ND		ug/kg	170	--	1
2,6-Dinitrotoluene	ND		ug/kg	170	--	1
Azobenzene	ND		ug/kg	170	--	1
Fluoranthene	650		ug/kg	100	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--	1
Hexachlorobutadiene	ND		ug/kg	170	--	1
Hexachlorocyclopentadiene	ND		ug/kg	480	--	1
Hexachloroethane	ND		ug/kg	130	--	1
Isophorone	ND		ug/kg	150	--	1
Naphthalene	ND		ug/kg	170	--	1
Nitrobenzene	ND		ug/kg	150	--	1
NDPA/DPA	ND		ug/kg	130	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	--	1
Butyl benzyl phthalate	860		ug/kg	170	--	1
Di-n-butylphthalate	ND		ug/kg	170	--	1
Di-n-octylphthalate	ND		ug/kg	170	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04 Date Collected: 08/03/17 10:00

Client ID: WC4 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	170	--	1
Dimethyl phthalate	ND		ug/kg	170	--	1
Benzo(a)anthracene	420		ug/kg	100	--	1
Benzo(a)pyrene	460		ug/kg	130	--	1
Benzo(b)fluoranthene	410		ug/kg	100	--	1
Benzo(k)fluoranthene	120		ug/kg	100	--	1
Chrysene	390		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	130	--	1
Anthracene	130		ug/kg	100	--	1
Benzo(ghi)perylene	290		ug/kg	130	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	720		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	250		ug/kg	130	--	1
Pyrene	1300		ug/kg	100	--	1
Biphenyl	ND		ug/kg	380	--	1
Aniline	ND		ug/kg	200	--	1
4-Chloroaniline	ND		ug/kg	170	--	1
1-Methylnaphthalene	ND		ug/kg	170	--	1
2-Nitroaniline	ND		ug/kg	170	--	1
3-Nitroaniline	ND		ug/kg	170	--	1
4-Nitroaniline	ND		ug/kg	170	--	1
Dibenzofuran	ND		ug/kg	170	--	1
2-Methylnaphthalene	ND		ug/kg	200	--	1
n-Nitrosodimethylamine	ND		ug/kg	330	--	1
2,4,6-Trichlorophenol	ND		ug/kg	100	--	1
p-Chloro-m-cresol	ND		ug/kg	170	--	1
2-Chlorophenol	ND		ug/kg	170	--	1
2,4-Dichlorophenol	ND		ug/kg	150	--	1
2,4-Dimethylphenol	ND		ug/kg	170	--	1
2-Nitrophenol	ND		ug/kg	360	--	1
4-Nitrophenol	ND		ug/kg	230	--	1
2,4-Dinitrophenol	ND		ug/kg	800	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	430	--	1
Pentachlorophenol	ND		ug/kg	130	--	1
Phenol	ND		ug/kg	170	--	1
2-Methylphenol	ND		ug/kg	170	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--	1
2,4,5-Trichlorophenol	ND		ug/kg	170	--	1

Project Name: OSPREY LANDING **Lab Number:** L1726925

Project Number: 171.05010 **Report Date:** 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04 Date Collected: 08/03/17 10:00

Client ID: WC4 Date Received: 08/03/17

Sample Location: PORTSMOUTH, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	540	--	1
Benzyl Alcohol	ND		ug/kg	170	--	1
Carbazole	ND		ug/kg	170	--	1
Pyridine	ND		ug/kg	180	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	89		25-120
Phenol-d6	94		10-120
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	82		30-120
2,4,6-Tribromophenol	91		10-136
4-Terphenyl-d14	79		18-120

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/17 19:29
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1029375-1					
Acenaphthene	ND		ug/kg	130	--
Benzidine	ND		ug/kg	540	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Chlorophenyl phenyl ether	ND		ug/kg	160	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachlorocyclopentadiene	ND		ug/kg	470	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
NDPA/DPA	ND		ug/kg	130	--
n-Nitrosodi-n-propylamine	ND		ug/kg	160	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/17 19:29
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1029375-1					
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Biphenyl	ND		ug/kg	380	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
1-Methylnaphthalene	ND		ug/kg	160	--
2-Nitroaniline	ND		ug/kg	160	--
3-Nitroaniline	ND		ug/kg	160	--
4-Nitroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
n-Nitrosodimethylamine	ND		ug/kg	330	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
p-Chloro-m-cresol	ND		ug/kg	160	--
2-Chlorophenol	ND		ug/kg	160	--

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/17 19:29
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1029375-1					
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
4,6-Dinitro-o-cresol	ND		ug/kg	430	--
Pentachlorophenol	ND		ug/kg	130	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Benzoic Acid	ND		ug/kg	530	--
Benzyl Alcohol	ND		ug/kg	160	--
Carbazole	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/17 19:29
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/17 13:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1029375-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		25-120
Phenol-d6	69		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	71		30-120
2,4,6-Tribromophenol	77		10-136
4-Terphenyl-d14	77		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1029375-2 WG1029375-3								
Acenaphthene	85		90		31-137	6		50
Benzidine	48		53		10-66	10		50
1,2,4-Trichlorobenzene	71		79		38-107	11		50
Hexachlorobenzene	92		101		40-140	9		50
Bis(2-chloroethyl)ether	72		77		40-140	7		50
2-Chloronaphthalene	83		86		40-140	4		50
1,2-Dichlorobenzene	69		73		40-140	6		50
1,3-Dichlorobenzene	65		70		40-140	7		50
1,4-Dichlorobenzene	67		71		28-104	6		50
3,3'-Dichlorobenzidine	66		72		40-140	9		50
2,4-Dinitrotoluene	98		100		40-132	2		50
2,6-Dinitrotoluene	88		93		40-140	6		50
Azobenzene	95		100		40-140	5		50
Fluoranthene	85		91		40-140	7		50
4-Chlorophenyl phenyl ether	95		96		40-140	1		50
4-Bromophenyl phenyl ether	99		103		40-140	4		50
Bis(2-chloroisopropyl)ether	71		76		40-140	7		50
Bis(2-chloroethoxy)methane	79		84		40-117	6		50
Hexachlorobutadiene	85		86		40-140	1		50
Hexachlorocyclopentadiene	83		88		40-140	6		50
Hexachloroethane	73		79		40-140	8		50
Isophorone	82		88		40-140	7		50
Naphthalene	79		82		40-140	4		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1029375-2 WG1029375-3								
Nitrobenzene	87		90		40-140	3		50
NDPA/DPA	91		95		36-157	4		50
n-Nitrosodi-n-propylamine	78		84		32-121	7		50
Bis(2-ethylhexyl)phthalate	82		86		40-140	5		50
Butyl benzyl phthalate	88		98		40-140	11		50
Di-n-butylphthalate	84		91		40-140	8		50
Di-n-octylphthalate	84		90		40-140	7		50
Diethyl phthalate	91		98		40-140	7		50
Dimethyl phthalate	92		94		40-140	2		50
Benzo(a)anthracene	77		82		40-140	6		50
Benzo(a)pyrene	84		88		40-140	5		50
Benzo(b)fluoranthene	81		87		40-140	7		50
Benzo(k)fluoranthene	82		85		40-140	4		50
Chrysene	76		80		40-140	5		50
Acenaphthylene	83		88		40-140	6		50
Anthracene	80		87		40-140	8		50
Benzo(ghi)perylene	80		85		40-140	6		50
Fluorene	88		96		40-140	9		50
Phenanthrene	80		86		40-140	7		50
Dibenzo(a,h)anthracene	80		86		40-140	7		50
Indeno(1,2,3-cd)pyrene	82		88		40-140	7		50
Pyrene	85		90		35-142	6		50
Biphenyl	86		90		54-104	5		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1029375-2 WG1029375-3								
Aniline	54		60		40-140	11		50
4-Chloroaniline	77		83		40-140	8		50
1-Methylnaphthalene	93		97		26-130	4		50
2-Nitroaniline	98		104		47-134	6		50
3-Nitroaniline	91		97		26-129	6		50
4-Nitroaniline	103		107		41-125	4		50
Dibenzofuran	88		93		40-140	6		50
2-Methylnaphthalene	79		82		40-140	4		50
n-Nitrosodimethylamine	68		71		22-100	4		50
2,4,6-Trichlorophenol	99		101		30-130	2		50
p-Chloro-m-cresol	98		98		26-103	0		50
2-Chlorophenol	78		82		25-102	5		50
2,4-Dichlorophenol	84		90		30-130	7		50
2,4-Dimethylphenol	90		100		30-130	11		50
2-Nitrophenol	87		94		30-130	8		50
4-Nitrophenol	**136**	Q	**136**	Q	11-114	0		50
2,4-Dinitrophenol	106		106		4-130	0		50
4,6-Dinitro-o-cresol	119		127		10-130	7		50
Pentachlorophenol	101		107		17-109	6		50
Phenol	70		76		26-90	8		50
2-Methylphenol	80		88		30-130.	10		50
3-Methylphenol/4-Methylphenol	82		88		30-130	7		50
2,4,5-Trichlorophenol	94		100		30-130	6		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1029375-2 WG1029375-3								
Benzoic Acid	**0**	Q	**0**	Q	10-110	NC		50
Benzyl Alcohol	85		91		40-140	7		50
Carbazole	82		88		54-128	7		50
Pyridine	56		59		10-93	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	70		74		25-120
Phenol-d6	73		78		10-120
Nitrobenzene-d5	83		89		23-120
2-Fluorobiphenyl	77		82		30-120
2,4,6-Tribromophenol	102		101		10-136
4-Terphenyl-d14	81		88		18-120

PCBS

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/09/17 11:49
Analyst: HT
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.5	--	1	A
Aroclor 1221	ND		ug/kg	36.5	--	1	A
Aroclor 1232	ND		ug/kg	36.5	--	1	A
Aroclor 1242	ND		ug/kg	36.5	--	1	A
Aroclor 1248	ND		ug/kg	36.5	--	1	A
Aroclor 1254	ND		ug/kg	36.5	--	1	B
Aroclor 1260	ND		ug/kg	36.5	--	1	B
Aroclor 1262	ND		ug/kg	36.5	--	1	A
Aroclor 1268	ND		ug/kg	36.5	--	1	A
PCBs, Total	ND		ug/kg	36.5	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/09/17 12:05
Analyst: HT
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.9	--	1	A
Aroclor 1221	ND		ug/kg	33.9	--	1	A
Aroclor 1232	ND		ug/kg	33.9	--	1	A
Aroclor 1242	ND		ug/kg	33.9	--	1	A
Aroclor 1248	ND		ug/kg	33.9	--	1	A
Aroclor 1254	ND		ug/kg	33.9	--	1	B
Aroclor 1260	ND		ug/kg	33.9	--	1	A
Aroclor 1262	ND		ug/kg	33.9	--	1	A
Aroclor 1268	ND		ug/kg	33.9	--	1	B
PCBs, Total	ND		ug/kg	33.9	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	67		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/09/17 12:22
Analyst: HT
Percent Solids: 97%

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	32.9	--	1	A
Aroclor 1221	ND		ug/kg	32.9	--	1	A
Aroclor 1232	ND		ug/kg	32.9	--	1	A
Aroclor 1242	ND		ug/kg	32.9	--	1	A
Aroclor 1248	ND		ug/kg	32.9	--	1	A
Aroclor 1254	ND		ug/kg	32.9	--	1	A
Aroclor 1260	ND		ug/kg	32.9	--	1	A
Aroclor 1262	ND		ug/kg	32.9	--	1	A
Aroclor 1268	ND		ug/kg	32.9	--	1	A
PCBs, Total	ND		ug/kg	32.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	70		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/09/17 12:39
Analyst: HT
Percent Solids: 98%

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	32.2	--	1	A
Aroclor 1221	ND		ug/kg	32.2	--	1	A
Aroclor 1232	ND		ug/kg	32.2	--	1	A
Aroclor 1242	ND		ug/kg	32.2	--	1	A
Aroclor 1248	ND		ug/kg	32.2	--	1	A
Aroclor 1254	ND		ug/kg	32.2	--	1	A
Aroclor 1260	ND		ug/kg	32.2	--	1	A
Aroclor 1262	ND		ug/kg	32.2	--	1	A
Aroclor 1268	ND		ug/kg	32.2	--	1	A
PCBs, Total	ND		ug/kg	32.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/08/17 08:49
Analyst: JW

Extraction Method: EPA 3546
Extraction Date: 08/08/17 00:41
Cleanup Method: EPA 3665A
Cleanup Date: 08/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 01-04 Batch: WG1029732-1						
Aroclor 1016	ND		ug/kg	31.6	--	A
Aroclor 1221	ND		ug/kg	31.6	--	A
Aroclor 1232	ND		ug/kg	31.6	--	A
Aroclor 1242	ND		ug/kg	31.6	--	A
Aroclor 1248	ND		ug/kg	31.6	--	A
Aroclor 1254	ND		ug/kg	31.6	--	A
Aroclor 1260	ND		ug/kg	31.6	--	A
Aroclor 1262	ND		ug/kg	31.6	--	A
Aroclor 1268	ND		ug/kg	31.6	--	A
PCBs, Total	ND		ug/kg	31.6	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	78		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
PCB by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1029732-2 WG1029732-3									
Aroclor 1016	77		78		40-140	1		50	A
Aroclor 1260	66		66		40-140	0		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		77		30-150	A
Decachlorobiphenyl	73		75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		82		30-150	B
Decachlorobiphenyl	87		89		30-150	B

PESTICIDES

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/09/17 09:03
Analyst: JW
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	8.76	--	1	A
Lindane	ND		ug/kg	3.65	--	1	A
Alpha-BHC	ND		ug/kg	3.65	--	1	A
Beta-BHC	ND		ug/kg	8.76	--	1	A
Heptachlor	ND		ug/kg	4.38	--	1	A
Aldrin	ND		ug/kg	8.76	--	1	A
Heptachlor epoxide	ND		ug/kg	16.4	--	1	A
Endrin	ND		ug/kg	3.65	--	1	A
Endrin aldehyde	ND		ug/kg	10.9	--	1	A
Endrin ketone	ND		ug/kg	8.76	--	1	A
Dieldrin	ND		ug/kg	5.47	--	1	A
4,4'-DDE	13.6		ug/kg	8.76	--	1	B
4,4'-DDD	ND		ug/kg	8.76	--	1	A
4,4'-DDT	ND		ug/kg	16.4	--	1	A
Endosulfan I	ND		ug/kg	8.76	--	1	A
Endosulfan II	25.7	P	ug/kg	8.76	--	1	B
Endosulfan sulfate	ND		ug/kg	3.65	--	1	A
Methoxychlor	ND		ug/kg	16.4	--	1	A
Toxaphene	ND		ug/kg	164	--	1	A
Chlordane	ND		ug/kg	71.1	--	1	A
cis-Chlordane	ND		ug/kg	10.9	--	1	A
trans-Chlordane	ND		ug/kg	10.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	100		30-150	B
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	92		30-150	A

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 08/09/17 00:23
Analyst: SL
Percent Solids: 90%
Methylation Date: 08/07/17 07:13

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 08/06/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3690	--	1	B
MCPA	ND		ug/kg	3690	--	1	A
Dalapon	ND		ug/kg	36.9	--	1	A
Dicamba	ND		ug/kg	36.9	--	1	A
Dichloroprop	ND		ug/kg	36.9	--	1	A
2,4-D	ND		ug/kg	184	--	1	A
2,4-DB	ND		ug/kg	184	--	1	A
2,4,5-T	ND		ug/kg	184	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	184	--	1	B
Dinoseb	ND		ug/kg	36.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	73		30-150	A
DCAA	71		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/09/17 09:16
Analyst: JW
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	8.34	--	1	A
Lindane	ND		ug/kg	3.47	--	1	A
Alpha-BHC	ND		ug/kg	3.47	--	1	A
Beta-BHC	ND		ug/kg	8.34	--	1	A
Heptachlor	ND		ug/kg	4.17	--	1	A
Aldrin	ND		ug/kg	8.34	--	1	A
Heptachlor epoxide	ND		ug/kg	15.6	--	1	A
Endrin	ND		ug/kg	3.47	--	1	A
Endrin aldehyde	ND		ug/kg	10.4	--	1	A
Endrin ketone	ND		ug/kg	8.34	--	1	A
Dieldrin	ND		ug/kg	5.21	--	1	B
4,4'-DDE	10.0		ug/kg	8.34	--	1	A
4,4'-DDD	ND		ug/kg	8.34	--	1	A
4,4'-DDT	16.9		ug/kg	15.6	--	1	B
Endosulfan I	ND		ug/kg	8.34	--	1	A
Endosulfan II	ND		ug/kg	8.34	--	1	A
Endosulfan sulfate	ND		ug/kg	3.47	--	1	A
Methoxychlor	ND		ug/kg	15.6	--	1	A
Toxaphene	ND		ug/kg	156	--	1	A
Chlordane	ND		ug/kg	67.7	--	1	A
cis-Chlordane	ND		ug/kg	10.4	--	1	A
trans-Chlordane	ND		ug/kg	10.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	96		30-150	B
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	71		30-150	A

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 08/09/17 00:43
Analyst: SL
Percent Solids: 93%
Methylation Date: 08/07/17 07:13

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 08/06/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3540	--	1	A
MCPA	ND		ug/kg	3540	--	1	A
Dalapon	ND		ug/kg	35.4	--	1	A
Dicamba	ND		ug/kg	35.4	--	1	A
Dichloroprop	ND		ug/kg	35.4	--	1	A
2,4-D	ND		ug/kg	177	--	1	B
2,4-DB	ND		ug/kg	177	--	1	A
2,4,5-T	ND		ug/kg	177	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	177	--	1	A
Dinoseb	ND		ug/kg	35.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	83		30-150	A
DCAA	77		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/09/17 09:29
Analyst: JW
Percent Solids: 97%

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	8.15	--	1	A
Lindane	ND		ug/kg	3.39	--	1	A
Alpha-BHC	ND		ug/kg	3.39	--	1	A
Beta-BHC	ND		ug/kg	8.15	--	1	A
Heptachlor	ND		ug/kg	4.07	--	1	A
Aldrin	ND		ug/kg	8.15	--	1	A
Heptachlor epoxide	ND		ug/kg	15.3	--	1	A
Endrin	ND		ug/kg	3.39	--	1	A
Endrin aldehyde	ND		ug/kg	10.2	--	1	A
Endrin ketone	ND		ug/kg	8.15	--	1	A
Dieldrin	ND		ug/kg	5.09	--	1	A
4,4'-DDE	ND		ug/kg	8.15	--	1	B
4,4'-DDD	ND		ug/kg	8.15	--	1	A
4,4'-DDT	ND		ug/kg	15.3	--	1	B
Endosulfan I	ND		ug/kg	8.15	--	1	A
Endosulfan II	ND		ug/kg	8.15	--	1	A
Endosulfan sulfate	ND		ug/kg	3.39	--	1	A
Methoxychlor	ND		ug/kg	15.3	--	1	A
Toxaphene	ND		ug/kg	153	--	1	A
Chlordane	ND		ug/kg	66.2	--	1	A
cis-Chlordane	ND		ug/kg	10.2	--	1	A
trans-Chlordane	ND		ug/kg	10.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	109		30-150	B
2,4,5,6-Tetrachloro-m-xylene	93		30-150	A
Decachlorobiphenyl	79		30-150	A

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 08/09/17 01:22
Analyst: SL
Percent Solids: 97%
Methylation Date: 08/07/17 07:13

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 08/06/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3380	--	1	A
MCPA	ND		ug/kg	3380	--	1	A
Dalapon	ND		ug/kg	33.8	--	1	A
Dicamba	ND		ug/kg	33.8	--	1	A
Dichloroprop	ND		ug/kg	33.8	--	1	A
2,4-D	ND		ug/kg	169	--	1	A
2,4-DB	ND		ug/kg	169	--	1	A
2,4,5-T	ND		ug/kg	169	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	169	--	1	A
Dinoseb	ND		ug/kg	33.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	88		30-150	A
DCAA	86		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/09/17 09:43
Analyst: JW
Percent Solids: 98%

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	7.92	--	1	A
Lindane	ND		ug/kg	3.30	--	1	A
Alpha-BHC	ND		ug/kg	3.30	--	1	A
Beta-BHC	ND		ug/kg	7.92	--	1	A
Heptachlor	ND		ug/kg	3.96	--	1	A
Aldrin	ND		ug/kg	7.92	--	1	A
Heptachlor epoxide	ND		ug/kg	14.8	--	1	A
Endrin	ND		ug/kg	3.30	--	1	A
Endrin aldehyde	ND		ug/kg	9.90	--	1	A
Endrin ketone	ND		ug/kg	7.92	--	1	B
Dieldrin	ND		ug/kg	4.95	--	1	A
4,4'-DDE	ND		ug/kg	7.92	--	1	B
4,4'-DDD	ND		ug/kg	7.92	--	1	A
4,4'-DDT	15.7		ug/kg	14.8	--	1	A
Endosulfan I	ND		ug/kg	7.92	--	1	A
Endosulfan II	ND		ug/kg	7.92	--	1	A
Endosulfan sulfate	ND		ug/kg	3.30	--	1	A
Methoxychlor	ND		ug/kg	14.8	--	1	A
Toxaphene	ND		ug/kg	148	--	1	A
Chlordane	ND		ug/kg	64.4	--	1	A
cis-Chlordane	ND		ug/kg	9.90	--	1	A
trans-Chlordane	ND		ug/kg	9.90	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	83		30-150	B
2,4,5,6-Tetrachloro-m-xylene	92		30-150	A
Decachlorobiphenyl	81		30-150	A

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 08/09/17 01:41
Analyst: SL
Percent Solids: 98%
Methylation Date: 08/07/17 07:13

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 08/06/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3350	--	1	B
MCPA	ND		ug/kg	3350	--	1	A
Dalapon	ND		ug/kg	33.5	--	1	A
Dicamba	ND		ug/kg	33.5	--	1	A
Dichloroprop	ND		ug/kg	33.5	--	1	A
2,4-D	ND		ug/kg	168	--	1	B
2,4-DB	ND		ug/kg	168	--	1	A
2,4,5-T	ND		ug/kg	168	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	168	--	1	A
Dinoseb	ND		ug/kg	33.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	76		30-150	A
DCAA	76		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 08/08/17 23:25
Analyst: SL

Extraction Method: EPA 8151A
Extraction Date: 08/06/17 02:11

Methylation Date: 08/07/17 07:13

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01-04 Batch: WG1029358-1						
MCPP	ND		ug/kg	3250	--	A
MCPA	ND		ug/kg	3250	--	A
Dalapon	ND		ug/kg	32.5	--	A
Dicamba	ND		ug/kg	32.5	--	A
Dichloroprop	ND		ug/kg	32.5	--	A
2,4-D	ND		ug/kg	162	--	A
2,4-DB	ND		ug/kg	162	--	A
2,4,5-T	ND		ug/kg	162	--	A
2,4,5-TP (Silvex)	ND		ug/kg	162	--	A
Dinoseb	ND		ug/kg	32.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	61		30-150	A
DCAA	64		30-150	B

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/09/17 10:35
Analyst: JW

Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01-04 Batch: WG1029384-1						
Delta-BHC	ND		ug/kg	7.85	--	A
Lindane	ND		ug/kg	3.27	--	A
Alpha-BHC	ND		ug/kg	3.27	--	A
Beta-BHC	ND		ug/kg	7.85	--	A
Heptachlor	ND		ug/kg	3.92	--	A
Aldrin	ND		ug/kg	7.85	--	A
Heptachlor epoxide	ND		ug/kg	14.7	--	A
Endrin	ND		ug/kg	3.27	--	A
Endrin aldehyde	ND		ug/kg	9.81	--	A
Endrin ketone	ND		ug/kg	7.85	--	A
Dieldrin	ND		ug/kg	4.90	--	A
4,4'-DDE	ND		ug/kg	7.85	--	A
4,4'-DDD	ND		ug/kg	7.85	--	A
4,4'-DDT	ND		ug/kg	14.7	--	A
Endosulfan I	ND		ug/kg	7.85	--	A
Endosulfan II	ND		ug/kg	7.85	--	A
Endosulfan sulfate	ND		ug/kg	3.27	--	A
Methoxychlor	ND		ug/kg	14.7	--	A
Toxaphene	ND		ug/kg	147	--	A
Chlordane	ND		ug/kg	63.8	--	A
cis-Chlordane	ND		ug/kg	9.81	--	A
trans-Chlordane	ND		ug/kg	9.81	--	A

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/09/17 10:35
Analyst: JW

Extraction Method: EPA 3546
Extraction Date: 08/06/17 14:41
Cleanup Method: EPA 3620B
Cleanup Date: 08/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01-04 Batch: WG1029384-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	85		30-150	B
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	74		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1029358-2 WG1029358-3									
MCPP	111		106		30-150	5		30	A
MCPA	99		96		30-150	3		30	A
Dalapon	66		64		30-150	3		30	A
Dicamba	82		83		30-150	1		30	A
Dichloroprop	88		101		30-150	14		30	A
2,4-D	87		92		30-150	6		30	A
2,4-DB	83		85		30-150	2		30	A
2,4,5-T	88		87		30-150	1		30	A
2,4,5-TP (Silvex)	81		78		30-150	4		30	A
Dinoseb	72		**9**	Q	30-150	**158**	Q	30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	69		70		30-150	A
DCAA	80		78		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1029384-2 WG1029384-3									
Delta-BHC	81		102		30-150	23		30	A
Lindane	77		96		30-150	22		30	A
Alpha-BHC	80		98		30-150	20		30	A
Beta-BHC	100		127		30-150	24		30	A
Heptachlor	88		105		30-150	18		30	A
Aldrin	80		98		30-150	20		30	A
Heptachlor epoxide	91		114		30-150	22		30	A
Endrin	85		106		30-150	22		30	A
Endrin aldehyde	57		77		30-150	30		30	A
Endrin ketone	80		104		30-150	26		30	A
Dieldrin	102		128		30-150	23		30	A
4,4'-DDE	94		117		30-150	22		30	A
4,4'-DDD	99		120		30-150	19		30	A
4,4'-DDT	92		113		30-150	20		30	A
Endosulfan I	94		118		30-150	23		30	A
Endosulfan II	92		118		30-150	25		30	A
Endosulfan sulfate	70		92		30-150	27		30	A
Methoxychlor	98		123		30-150	23		30	A
cis-Chlordane	91		116		30-150	24		30	A
trans-Chlordane	82		101		30-150	21		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Pesticides by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1029384-2 WG1029384-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		81		30-150	B
Decachlorobiphenyl	79		85		30-150	B
2,4,5,6-Tetrachloro-m-xylene	82		93		30-150	A
Decachlorobiphenyl	69		83		30-150	A

METALS

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 90%

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	23.8		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Barium, Total	24.3		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Cadmium, Total	1.30		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Chromium, Total	65.0		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Lead, Total	3870		mg/kg	2.15	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Mercury, Total	ND		mg/kg	0.07	--	1	08/04/17 09:40	08/07/17 17:31	EPA 7471B	1,7471B	EA
Selenium, Total	ND		mg/kg	0.860	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB
Silver, Total	ND		mg/kg	0.430	--	1	08/07/17 18:15	08/07/17 23:35	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 08/04/17 06:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	ND		mg/l	0.500	--	1	08/08/17 16:45	08/09/17 15:11	EPA 3015	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	14.2		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Barium, Total	30.4		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Cadmium, Total	1.11		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Chromium, Total	36.1		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Lead, Total	232		mg/kg	2.13	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Mercury, Total	ND		mg/kg	0.07	--	1	08/04/17 09:40	08/07/17 17:33	EPA 7471B	1,7471B	EA
Selenium, Total	ND		mg/kg	0.852	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB
Silver, Total	ND		mg/kg	0.426	--	1	08/07/17 18:15	08/07/17 23:39	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 97%

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	11.4		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Barium, Total	18.3		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Cadmium, Total	0.594		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Chromium, Total	72.2		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Lead, Total	858		mg/kg	2.05	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Mercury, Total	ND		mg/kg	0.07	--	1	08/04/17 09:40	08/07/17 17:34	EPA 7471B	1,7471B	EA
Selenium, Total	ND		mg/kg	0.820	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB
Silver, Total	ND		mg/kg	0.410	--	1	08/07/17 18:15	08/07/17 23:43	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1726925
Project Number: 171.05010
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 98%

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.3		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Barium, Total	22.5		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Cadmium, Total	0.716		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Chromium, Total	101		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Lead, Total	1040		mg/kg	1.96	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Mercury, Total	ND		mg/kg	0.07	--	1	08/04/17 09:40	08/07/17 17:36	EPA 7471B	1,7471B	EA
Selenium, Total	ND		mg/kg	0.783	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB
Silver, Total	ND		mg/kg	0.391	--	1	08/07/17 18:15	08/07/17 23:47	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1028814-1										
Mercury, Total	ND		mg/kg	0.08	--	1	08/04/17 09:40	08/07/17 17:15	1,7471B	EA

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1029664-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Barium, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Cadmium, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Chromium, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Lead, Total	ND		mg/kg	2.00	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Selenium, Total	ND		mg/kg	0.800	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB
Silver, Total	ND		mg/kg	0.400	--	1	08/07/17 18:15	08/07/17 20:56	1,6010C	AB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 02 Batch: WG1029990-1										
Lead, TCLP	ND		mg/l	0.500	--	1	08/08/17 16:45	08/09/17 14:42	1,6010C	PS

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 08/04/17 06:09

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1028814-2 SRM Lot Number: D093-540								
Mercury, Total	98		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1029664-2 SRM Lot Number: D093-540								
Arsenic, Total	102		-		70-130	-		
Barium, Total	90		-		83-117	-		
Cadmium, Total	90		-		83-117	-		
Chromium, Total	89		-		80-120	-		
Lead, Total	88		-		82-117	-		
Selenium, Total	100		-		78-122	-		
Silver, Total	91		-		76-124	-		
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02 Batch: WG1029990-2								
Lead, TCLP	94		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1028814-3 QC Sample: L1726817-05 Client ID: MS Sample												
Mercury, Total	ND	0.176	0.22	**125**	Q	-	-		80-120	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1029664-3 QC Sample: L1727114-07 Client ID: MS Sample												
Arsenic, Total	5.76	10.6	15.7	94		-	-		75-125	-		20
Barium, Total	60.6	176	208	84		-	-		75-125	-		20
Cadmium, Total	0.678	4.48	4.34	82		-	-		75-125	-		20
Chromium, Total	8.16	17.6	22.4	81		-	-		75-125	-		20
Lead, Total	24.9	44.8	59.8	78		-	-		75-125	-		20
Selenium, Total	ND	10.6	9.80	93		-	-		75-125	-		20
Silver, Total	ND	26.4	22.7	86		-	-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1029990-3 QC Sample: L1726878-01 Client ID: MS Sample												
Lead, TCLP	ND	5.1	4.86	95		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1028814-4 QC Sample: L1726817-05 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1029664-4 QC Sample: L1727114-07 Client ID: DUP Sample						
Arsenic, Total	5.76	6.67	mg/kg	15		20
Barium, Total	60.6	64.2	mg/kg	6		20
Cadmium, Total	0.678	0.778	mg/kg	14		20
Chromium, Total	8.16	8.97	mg/kg	9		20
Lead, Total	24.9	31.3	mg/kg	**23**	Q	20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1029990-4 QC Sample: L1726878-01 Client ID: DUP Sample						
Lead, TCLP	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Dry Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/07/17 18:43	1,1030	JC

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Damp Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/08/17 01:00	1,1030	SB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Damp Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/08/17 01:00	1,1030	SB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Damp Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/08/17 01:00	1,1030	SB

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-01
Client ID: WC1
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 09:30
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.7		%	0.100	NA	1	-	08/04/17 13:38	121,2540G	RI
pH (H)	7.2		SU	-	NA	1	-	08/03/17 22:34	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:29	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:38	1,7.3	TL

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-02
Client ID: WC2
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 09:40
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.4		%	0.100	NA	1	-	08/04/17 13:38	121,2540G	RI
pH (H)	7.0		SU	-	NA	1	-	08/03/17 22:34	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:29	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:38	1,7.3	TL

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-03
Client ID: WC3
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 09:50
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.1		%	0.100	NA	1	-	08/04/17 13:38	121,2540G	RI
pH (H)	6.8		SU	-	NA	1	-	08/03/17 22:34	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:29	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:38	1,7.3	TL

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

SAMPLE RESULTS

Lab ID: L1726925-04
Client ID: WC4
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.6		%	0.100	NA	1	-	08/04/17 13:38	121,2540G	RI
pH (H)	7.2		SU	-	NA	1	-	08/03/17 22:34	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:29	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:38	1,7.3	TL

Project Name: OSPREY LANDING
Project Number: 171.05010
Lab Number: L1726925
Report Date: 08/10/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1029656-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:36	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1029659-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	08/07/17 21:35	08/07/17 23:28	1,7.3	TL

Lab Control Sample Analysis

Batch Quality Control

Project Name: OSPREY LANDING

Project Number: 171.05010

Lab Number: L1726925

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1028741-1								
pH	101		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1029656-2								
Sulfide, Reactive	79		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1029659-2								
Cyanide, Reactive	85		-		30-125	-		40

Lab Duplicate Analysis
Batch Quality Control

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1028741-2 QC Sample: L1726818-11 Client ID: DUP Sample						
pH	7.2	7.4	SU	3		5
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1028970-1 QC Sample: L1726906-02 Client ID: DUP Sample						
Solids, Total	95.2	95.3	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1029656-3 QC Sample: L1726925-04 Client ID: WC4						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1029659-3 QC Sample: L1726925-04 Client ID: WC4						
Cyanide, Reactive	ND	ND	mg/kg	NC		40

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726925-01A	Vial MeOH preserved	A	NA		4.8	Y	Absent		8260HLW-NH(14)
L1726925-01B	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-01C	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1726925-01E	Plastic 2oz unpreserved for TS	A	NA		4.8	Y	Absent		TS(7)
L1726925-01F	Glass 500ml/16oz unpreserved	A	NA		4.8	Y	Absent		8270TCL(14),IGNIT-1030(14),REACTS(14),PCB-8082(14),PH-9045(1),PEST-8081(14),HERB-8151(14),REACTCN(14)
L1726925-02A	Vial MeOH preserved	A	NA		4.8	Y	Absent		8260HLW-NH(14)
L1726925-02B	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-02C	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1726925-02E	Plastic 2oz unpreserved for TS	A	NA		4.8	Y	Absent		TS(7)
L1726925-02F	Glass 500ml/16oz unpreserved	A	NA		4.8	Y	Absent		8270TCL(14),IGNIT-1030(14),REACTS(14),PH-9045(1),PEST-8081(14),HERB-8151(14),REACTCN(14)
L1726925-02X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.8	Y	Absent		PB-CI(180)
L1726925-02X9	Tumble Vessel	A	NA		4.8	Y	Absent		-
L1726925-03A	Vial MeOH preserved	A	NA		4.8	Y	Absent		8260HLW-NH(14)
L1726925-03B	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-03C	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)

*Values in parentheses indicate holding time in days

Project Name: OSPREY LANDING
Project Number: 171.05010

Lab Number: L1726925
Report Date: 08/10/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726925-03E	Glass 60ml unpreserved split	A	NA		4.8	Y	Absent		TS(7)
L1726925-03F	Glass 500ml/16oz unpreserved	A	NA		4.8	Y	Absent		8270TCL(14),IGNIT-1030(14),REACTS(14),PH-9045(1),PEST-8081(14),HERB-8151(14),REACTCN(14)
L1726925-04A	Vial MeOH preserved	A	NA		4.8	Y	Absent		8260HLW-NH(14)
L1726925-04B	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-04C	Vial water preserved	A	NA		4.8	Y	Absent	03-AUG-17 21:52	8260HLW-NH(14)
L1726925-04D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1726925-04E	Glass 60ml unpreserved split	A	NA		4.8	Y	Absent		TS(7)
L1726925-04F	Glass 500ml/16oz unpreserved	A	NA		4.8	Y	Absent		8270TCL(14),IGNIT-1030(14),REACTS(14),PH-9045(1),PEST-8081(14),HERB-8151(14),REACTCN(14)

*Values in parentheses indicate holding time in days

Project Name:	OSPREY LANDING	**Lab Number:**	L1726925
Project Number:	171.05010	**Report Date:**	08/10/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	OSPREY LANDING	**Lab Number:**	L1726925
Project Number:	171.05010	**Report Date:**	08/10/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	OSPREY LANDING	**Lab Number:**	L1726925
Project Number:	171.05010	**Report Date:**	08/10/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 10/11/17

ALPHA Job #: L1736660

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: Ransom Consulting Inc
Address: 112 Corporate Dr
Portsmouth NH 03801
Phone: 603-436-1490
Email: jay.johannett@ransomenv.com
cc: srickerich@ransomenv.com

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth NH
Project #: 171.05010.001
Project Manager: Jay Johannett
ALPHA Quote #:

Report Information - Data Deliverables

☑ ADEx ☑ EMAIL

Billing Information

☑ Same as Client info PO #: 10460

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:
We would like to see reporting limits of:
< 400 mg/kg for Lead; and
< 11 mg/kg for Arsenic.

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Total Lead + Arsenic

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Lead + Arsenic	Sample Comments	TOTAL # BOTTLES
36660-01	Orange Paint Chips	10-10-17	12:00	paint chips	DAF	X	paint chips	1
02	Blue Paint Chips	10-10-17	12:00	paint chips	DAF	X	paint chips	1

Container Type	A
Preservative	A

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	10-10-17/12:30	AAL	10/11/17 13:30
	10/11/17 1445		10/11/17 1445
	10/11/17		10/11/17 16:25

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

DES Waste Management Division
29 Hazen Drive; PO Box 95
Concord, NH 03302-0095

SUPPLEMENTAL SUBSURFACE INVESTIGATION

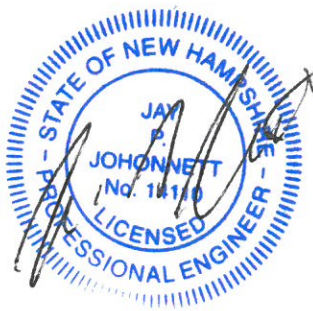
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

NH DES Site #: 201705037
Project Type:
Project Number: 0037896

Prepared For:

City of Portsmouth
Department of Public Works
1 Junkins Avenue
Portsmouth, New Hampshire

PE/PG Stamp:



Prepared By:

Ransom Consulting, Inc.
Pease International Tradeport
112 Corporate Drive
Portsmouth, NH 03801
603.436.1490

Jay P. Johonnett, P.E.
jay.johonnett@ransomenv.com

November 28, 2017

SUPPLEMENTAL SUBSURFACE INVESTIGATION
OSPREY LANDING WATER TANK SITE
STAYSAIL WAY
PORTSMOUTH, NEW HAMPSHIRE

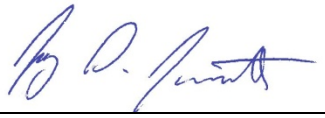
Prepared for:

City of Portsmouth
Department of Public Works
1 Junkins Avenue
Portsmouth, New Hampshire

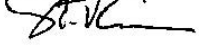
Prepared by:

Ransom Consulting, Inc.
Pease International Tradeport
112 Corporate Drive
Portsmouth, New Hampshire 03801
603.436.1490

Project 171.05010
November 28, 2017



Jay P. Johonnett, P.E.
Project Engineer



Steven F. Rickerich, P.G.
Vice President

TABLE OF CONTENTS

1.0 INTRODUCTION

Ransom Consulting, Inc. (Ransom) has completed this supplemental subsurface investigation to address arsenic-impacted soil at the City of Portsmouth (City) parcel associated with a former municipal water tank, herein called the Osprey Landing Water Tank site (the Site) and immediately adjoining lawn areas, scrub area, and woodland area off of Staysail Way in Portsmouth, New Hampshire. Figures 1 and 2 show the location and layout of the Site.

Since 2016, the Site has been the subject of multiple environmental assessments to delineate elevated lead and better understand the distribution and occurrence of arsenic detected in Site and area soils, most recently culminating in a Remedial Action Plan (RAP) developed by Ransom dated September 5, 2017. Elevated lead concentrations in soil, i.e., greater than the New Hampshire Department of Environmental Services (NH DES) Env-Or 600 Soil Remediation Standard (SRS) for lead of 400 milligrams per kilogram (mg/kg), have been documented in shallow soils beneath and adjacent to the water tank. The source of the lead has been attributed to paint from the water tank. Arsenic has also been detected in Site soils at concentrations above the NH DES arsenic SRS (11 mg/kg); however, the source of the arsenic is less clear.

The RAP includes the following discussion relative to the source or the detected arsenic:

> "Although the highest arsenic concentration is co-located with the most elevated lead concentrations, namely where the placed/graded soils area with reddish-orange paint chips were observed, the generally poor correlation between high arsenic and high lead concentrations (whether in shallow or deep soils, whether reddish-orange paint or aqua-blue paint was noted) present the possibility for multiple sources:
>
> 1. Pesticides applied to a possible small orchard;
>
> 2. Herbicides applied to control vegetation beneath the tank; and
>
> 3. Naturally occurring arsenic as is associated with local Seacoast New Hampshire lithologies (the Merrimack Group) and soils derived from those lithologies."

In developing clean-up goals for the Site, the following discussion was also presented in the RAP:

> "In general, high arsenic concentrations were very poorly correlated with high lead concentrations which does not support a sole-source associated with paint. Laboratory analyses of soil samples collected from the Site in inferred background locations (no evidence of impacts from lead-based paint) detected arsenic at concentrations ranging from 6.22 mg/kg to 16.1 mg/kg, while field XRF screening results detected arsenic at concentrations ranging from 13 mg/kg to 28 mg/kg in similar background locations. Several lines of evidence also point to some period of agricultural use for the immediate knoll, including: the presence of an old apple tree; historic topographic maps (1942) showing a dirt road to the knoll. Co-located pesticides 4,4-DDT, 4,4-DDE, and endosulfan may have been associated with insect pest control after water tank construction. In addition, arsenicals were used through the 1970s to control vegetation, which is a possible scenario for weed control beneath military infrastructure.
>
> Seacoast New Hampshire soils, particularly immature (unweathered) soils, are known to have anomalously high arsenic concentrations. Shallow (visible outcrop) bedrock indicates the likely presence of immature soils. The native bedrock at and proximal to the Site, which includes

lithologies of the eugeosynclinal Merrimack Group, is a probable source of much of the arsenic for soils. Ransom believes the naturally occurring arsenic concentrations in Site soils likely range up to at least approximately 16.1 mg/kg, as supported by laboratory analytical results.

Given the above uncertainty relative to arsenic at this Site Ransom proposes removal of elevated arsenic co-located with lead concentrations above 400 mg/kg. No removal of soils with arsenic at background concentrations (16.1 m/kg) or soils with arsenic that may occur at moderately elevated concentrations at depth or laterally away from the lead soil removal area because of probable historical pesticide or herbicide application is proposed."

Because NH DES was committed with other project obligations and unavailable to review or discuss the findings and conclusions of the RAP within the required timeframe, the City of Portsmouth authorized the additional investigations documented in this report to further support the proposed remedial objectives for the Site, and the stated intent not to remove soils with moderately elevated arsenic concentrations outside of the proposed lead remediation areas. The focus of the work documented herein is to:

1. Discount or affirm the possible association of arsenic with water tower paint;

2. Better understand the spatial occurrence of arsenic in the Site area;

3. Better quantify the range of natural background concentrations including the possibility of co-location with, or concentration of arsenic in iron-rich soil horizons; and

4. Assess for other possible other background conditions/occurrences for arsenic.

This effort is warranted because the information collected to date does not support a correlation of high lead concentrations to high arsenic concentrations; and therefore, remedial efforts to mitigate lead impacts are not expected to achieve attainment of arsenic soil remediation standards, nor should they if the arsenic is present as a result of natural minerals, or pesticides and herbicides historically used as intended.

2.0 SUBSURFACE INVESTIGATION

The initial investigations of Site soil quality conducted by Tighe & Bond and Ransom detected elevated concentrations of lead and arsenic in Site soils. To further characterize the distribution of arsenic in soil at the Site and collect evidence for or against a background condition at the Site, Ransom conducted a subsurface investigation at the Site in October 2017. In preparation for this investigation Ransom pre-marked boring locations, notified Dig Safe, updated the Site Health and Safety Plan, and coordinated with subcontractors.

2.1 Field Explorations

On October 10, 2017, Ransom visited the Site and collected paint chips for the analysis of arsenic and lead content. Three different varieties, reddish-orange, aqua-blue, and layered reddish-orange and aqua-blue chips were collected separately in the field. Reddish-orange paint chips were notably located surrounding the location of soil sample 31, in sandy deposits along the northern edge of the flattened out pad and within the fenced area that marks the bounds. Aqua-blue paint chips were collected from within the fenced square City or Portsmouth parcel and to the east of the fenced area in the vicinity of soil sample 8. Layered paint chips, having a reddish-orange (older) paint layer and an aqua-blue (younger) paint layer, were discarded and the retained paint chips of solely reddish orange or aqua-blue samples were rinsed with water to remove all soil particles and air dried prior to laboratory submittal.

On October 13, 2017, Ransom returned to the Site and using hand-Geoprobe® methods, advanced nine borings (designated B101 through B109) from 0 to 3 or 4 feet below grade and collected discrete soils samples from intervals targeted at 1 to 1.5, 2 to 2.5 and 3 to 3.5 feet below grade. Within the area of lead impacted soils planned for remediation the purpose of the borings (B101 through B105) was to better understand arsenic concentrations at depths below planned excavation depths at locations of known elevated arsenic. These five borings were advanced in the previously sampled locations 8, 14, and 18 and at the Tighe & Bond soil locations 20 feet to the northeast of and 20 feet to the southwest of the water tank footprint centroid. Remote from the water tank, the purpose of the borings (B106 through B109) was to better understand arsenic concentrations that inarguably could be considered “background”. These four borings were advanced approximately 200 to 250 feet from the water tank. Iron-stained soil horizons were biased for sampling to explore the possible association of elevated arsenic with soil conditions promoting elevated iron accumulation. Soil boring locations are presented on Figure 3.

Site soils were generally observed to consist of silty sand and sub-rounded gravel overlying bedrock. Bands of orange, iron-rich soil were commonly encountered, but at variable depths. Refusal, presumed to represent the bedrock surface, was encountered at 3 or 3.5 feet below grade in borings B101 through B104. Refusal at 3.5 feet below grade was also reached in borings B107 and B108. Groundwater was not observed during the excavation activates, however mottling was observed in B108 from 2 to 3.5 feet below grade.

2.2 Laboratory Analyses

Paint chip samples were analyzed for the presence of lead and arsenic by U.S. Environmental Protection Agency (U.S. EPA) Method 3050B. From the 9 soil borings, 25 soil samples were selected and analyzed for the presence of lead, arsenic, and iron by U.S. EPA Method 3050B. Laboratory analytical testing was performed by Alpha Analytical, Inc. of Westborough, Massachusetts. Laboratory analytical reports are attached as Appendix A.

3.0 RESULTS

Laboratory analytical results for paint chip samples are summarized in Table 1 and soils samples results are summarized in Table 2. Figure 3 illustrates the distribution of arsenic in Site soils based on our previous and most recent field screening and laboratory results.

3.1 Paint Chip Lead and Arsenic Levels

Total arsenic in the reddish-orange paint chips was detected at 8.8 mg/kg, which is below the NH DES SRS and identified background level of 11 mg/kg, while the aqua-blue paint chips did not contain detectable (i.e., less than the reporting limit of 0.61 mg/kg) amounts of arsenic. Total lead in the reddish-orange paint chips was detected at 87,000 mg/kg, above the NH DES SRS of 400 mg/kg. Total lead in the aqua-blue paint chips was 190 mg/kg, below the applicable SRS.

3.2 Soil Arsenic, Lead, and Iron Levels

Thirteen soils samples were submitted for laboratory analyses from locations anticipated to be within the impact area for the former water tank paint and where prior analytical arsenic results showed elevated arsenic concentrations in the upper foot of soil (borings B101 through B105). To evaluate the potential depth of elevated arsenic concentrations, these samples were collected from depths ranging from approximately 1 to 3.5 feet below ground, in soils anticipated to have been undisturbed from tank removal activities. Arsenic was detected in these soil samples at concentrations ranging from 9.17 mg/kg to 23.3 mg/kg. Arsenic concentrations either increased or decreased with depth, depending on the boring.

Twelve soil samples were submitted for laboratory analyses from locations anticipated to be outside the limits of impacts from the former water tank paint (borings B106 through B109) to evaluate likely background concentrations of arsenic in native Site soils and to evaluate if native arsenic is concentrated in specific soil horizons, especially visually iron-rich horizons. These samples were collected from depths ranging from approximately 1 to 3.5 feet below ground, in soils consistent with the native glacial till soils. Arsenic was detected in these soil samples at concentrations ranging from 8.85 mg/kg to 48.6 mg/kg. With the exception of B109, each boring had at least two samples with an arsenic concentration above 11 mg/kg, the NH DES SRS. Additionally, with the exception of the B108 (3-3.5') sample, arsenic concentrations tended to increase with depth. Arsenic concentrations at B107 were noticeably elevated (14.6, 24.6 and 48.6 mg/kg from depths of 1-1.5, 2-2.5, and 3-3.5 feet, respectively). This boring was advanced in a subtle topographic low within woodlands, but near a lawn-grassed area first developed as a residential community in the late 1940s for Air Force housing. The location of this boring is inferred to receive run-off from the lawn areas as well as the adjoining woodlands.

Iron concentrations ranged from 11,500 mg/kg to 48,800 mg/kg. A correlation was not apparent between iron concentrations and arsenic concentrations.

Lead concentrations in the deeper near water tank soils ranged from 9.3 mg/kg to 142 mg/kg, all well below the SRS for lead (400 mg/kg). Lead concentrations in remote location soil samples ranged from 4.2 mg/kg to 50.9 mg/kg. A correlation was not apparent between lead concentrations and arsenic concentrations regardless of area for these samples.

4.0 DISCUSSION

1. Paint chip sample results help confirm the source for elevated levels of lead in soils surrounding the former water tank, with reddish-orange paint chips having a lead concentration of 87,000 mg/kg. However, arsenic concentrations from paint chip samples (8.8 and <0.61 mg/kg) were below arsenic concentrations detected in every soil sample analyzed, and below the arsenic SRS. These low arsenic concentrations in paint chips are evidence that strongly discounts the water tank paint (even the older reddish orange paint) as a source for elevated arsenic in Site soils.

2. The hypothesis that soil horizons with prominent iron mineralization could be co-located with elevated arsenic concentrations was not supported for this Site and for the samples tested.

3. Soil samples collected at depth (greater that 1 foot below grade) from borings advanced near the the water-tank paint impacted area (B101 through B105) when compared to borings 200 to 250 feet away from the former water tank centroid (B106 through B109) are almost equally likely to exceed the arsenic SRS and considered not impacted from the water tank paint (10 out of 13 samples vs. 7 out of 12 samples).

4. For this dataset, soil samples from B107 stand out as an outlier deserving a more thorough consideration for the detected arsenic concentrations of 24.6 and 48.6 mg/kg for samples from the 2 to 2.5 and 3 to 3.5 depth intervals. The boring was advanced in a local low point that would receive surficial drainage from the south (including the relatively remote former water tank location located more than 180 feet away), west (proximal forested land), and north (proximal residential complexes and lawn areas). Although the current buildings were constructed in 1996, according to City of Portsmouth Assessor's cards, the original buildings, which held the same general layout, were constructed in the 1940s when the area was developed for military housing. It is possible and perhaps likely the elevated arsenic concentrations detected in subsurface soils today at boring B107 are the result of arsenical herbicides used to maintain residential landscaping and runoff of these chemicals caused them to collect and infiltrate in the topographic low. It is noteworthy that the water tank was constructed as part of the military housing development and that the grounds at the tank and elsewhere were likely subject to the same maintenance activities. Arsenicals were common herbicide (and pesticides) applied in that era to control specific weeds and tend to get bound up in soils.

5.0 CONCLUSIONS

The additional analytical data collected indicate no evidence of association of Site arsenic with water tank paint.

In addition, no waste source has been identified for the arsenic detected.

It is likely that the detected arsenic in Site soils is attributable to naturally elevated arsenic concentrations associated with parent lithologies and soil materials, and additionally, it is probable that elevated arsenic concentrations in soils are also associated with arsenical herbicides and pesticides applied to Site grounds, likely when the property was managed as military housing (and military infrastructure). Finally, the presence of an old apple tree at the edge of the water tank clearing suggests past agricultural use of the knoll, possibly as a small orchard, which would be yet another likely pesticide source for the detected arsenic is Site soils.

Naturally occurring arsenic is not subject to regulation under Env-Or 600, nor is arsenic that is associated with pesticide/herbicide applied as intended for soils left in place.

As such, the additional information documented in this report supports the clean-up goals stated in the RAP:

> "Given the above uncertainty relative to arsenic [i.e., no indication that it is related to water tank paint] at this Site Ransom proposes removal of elevated arsenic co-located with lead concentrations above 400 mg/kg. No removal of soils with arsenic at background concentrations (16.1 m/kg) or soils with arsenic that may occur at moderately elevated concentrations at depth or laterally away from the lead soil removal area because of probable historical pesticide or herbicide application is proposed."

as well as the following Design Consideration for the remedial approach:

> "The proposed remedial action alternative is designed to remediate the near-surface, on-site soils with documented impacts due to lead, PAHs, and co-located arsenic at concentrations greater than the SRS, and as well as soils with greater than naturally-occurring concentrations for arsenic without the intent of chasing soils with probable arsenical herbicides/pesticides applied as intended outside of the remediation area."

If future development of the Site includes the excavation and removal of soils from the Site, then soils removed from the property having arsenic concentrations above the SRS could be subject to regulation.

6.0 LIMITATIONS

This report was prepared exclusively for the use of the City of Portsmouth, in accordance with our approved scope of work dated September 18, 2017. This report is based upon the information available to Ransom as of the date of this report, and Ransom expressly disclaims any obligation or undertaking to update or modify the opinions and recommendations as a consequence of any future changes in the available information. This report and the opinions and recommendations embodied herein are subject to the Ransom *Terms and Conditions*, including limitations pertaining to estimates of remedial costs. The City of Portsmouth recognizes that the services provided by Ransom and the contents of this report are solely for the benefit of the Client and its heirs, successors and permitted assigns whose reliance thereon is not independent of Client's. The contents of this report are not intended to be quoted or otherwise referenced to, nor furnished to any other person, and no other person shall be entitled to rely hereon, without Ransom's prior written consent.

TABLE 1: PAINT CHIP SAMPLE LABORATORY METALS RESULTS
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

Sample ID	Laboratory Analytical Results	
	Total Arsenic (mg/kg)	Total Lead (mg/kg)
Reddish-Orange Paint Chips	8.8	**87,000**
Aqua-Blue Paint Chips	ND (0.61)	190
NH DES Soil Remediation Standards (SRS)	11	400
NH DES Identified Background Levels	11	51

NOTES:

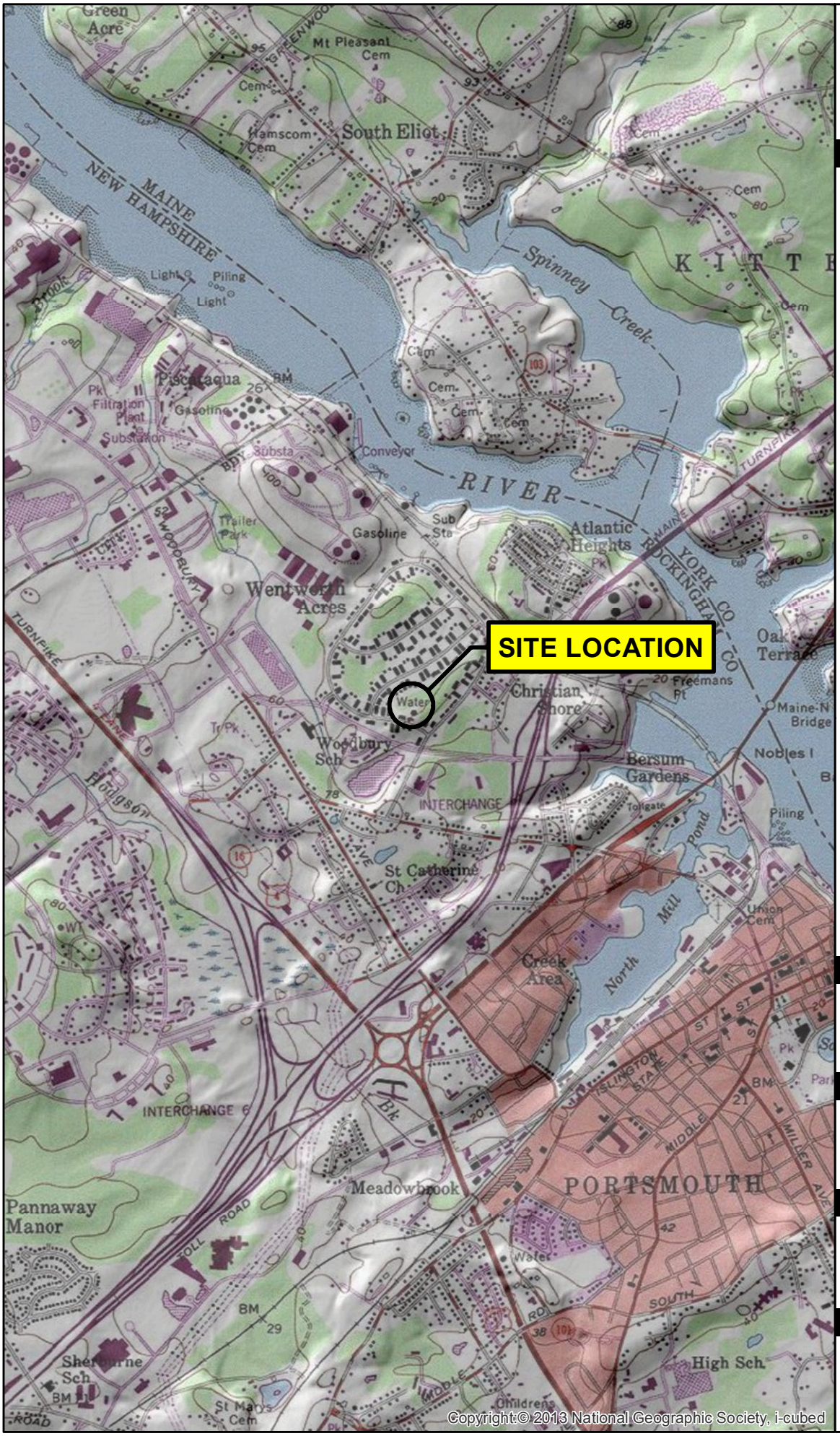
1. **Bold** concentrations exceed the applicable NH DES Env-Or 600 SRSs.
2. Background concentrations of metals in soil from report entitled "Background Metals Concentration Study New Hampshire Soils", prepared for NH DES by Sanborn, Head & Associates, Inc., dated November 1998.
3. ND = not detected (reporting limit in parenthesis)

TABLE 2: SOILS SAMPLE LABORATORY METALS RESULTS
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

Sample ID (Feet bgs)	Laboratory Analytical Results			Soil Description
	Total Arsenic (mg/kg)	Total Iron (mg/kg)	Total Lead (mg/kg)	
B101 (1-1.5)	**12.0**	26,100	15.3	Brown SAND, little silt, trace gravel
B101 (2-2.5)	**15.6**	32,400	47.5	Orange SAND and SILT, trace gravel
B101 (3-3.5)	**14.4**	48,800	10.7	Tan SAND, some Silt, little gravel; refusal at 3.5' bgs (weathered rock)
B102 (1-1.5)	10.2	24,500	16.2	Brown SAND and SILT, trace gravel
B102 (2-2.5)	**18.8**	23,400	30.9	Tan SAND and SILT, trace gravel; refusal at 3' bgs
B103 (1-1.5)	**23.3**	32,800	16.1	Brown SAND, some Silt, trace gravel
B103 (2-2.5)	**21.6**	30,000	16.1	Tan SAND and SILT, trace gravel, 1/2" iron stained layer
B103 (3-3.5)	**13.6**	24,600	11.5	Tan SAND, some Silt, little gravel; refusal at 3.5' bgs
B104 (1-1.5)	**14.6**	11,500	142	Brown SAND, some Silt, trace gravel
B104 (2-2.5)	9.2	22,900	23.4	Orange SAND and SILT, trace gravel
B104 (3-3.5)	9.9	24,200	9.6	Orangish-tan SAND and SILT, little gravel; refusal at 3.5' bgs
B105 (2-2.5)	**18.8**	26,600	30.6	Brown SAND, some Silt, little gravel
B105 (3-3.5)	**18.6**	28,300	9.3	Brown SAND, some Silt, little gravel; end of boring at 4' bgs
B106 (1-1.5)	10.3	31,100	50.9	Orange SILT, some Sand, trace gravel
B106 (2-2.5)	**13.2**	21,900	12.0	Brown & Orange SAND and SILT, little gravel
B106 (3-3.5)	**16.1**	21,400	7.8	Tan SAND, little silt, little gravel; end of boring at 4' bgs
B107 (1-1.5)	**14.6**	21,000	16.8	Orange SAND and SILT, trace gravel
B107 (2-2.5)	**24.6**	12,600	7.0	Tan & Orange SAND, little silt, trace gravel
B107 (3-3.5)	**48.6**	21,600	20.0	Tan SAND, little silt, trace gravel; refusal at 3.5' bgs
B108 (1-1.5)	**13.1**	21,000	8.5	Orange SAND and SILT, trace gravel
B108 (2-2.5)	**14.6**	12,600	6.5	Tan SAND, some Silt, trace gravel; orange & gray mottling
B108 (3-3.5)	11.0	11,600	4.2	Tan SAND, some Silt, trace gravel; refusal at 3.5' bgs
B109 (1-1.5)	8.9	27,600	9.2	Brown & Orange SAND and SILT, trace gravel
B109 (2-2.5)	9.2	17,300	6.8	Tan SAND and SILT, little gravel
B109 (3-3.5)	10.3	15,000	5.3	Tan SAND and SILT, little gravel; end of boring at 4' bgs
NH DES Soil Remediation Standards	11	NA	400	
NH DES Identified Background Levels	11	NA	51	

NOTES:

1. **Bold** concentrations exceed the applicable NH DES Env-Or 600 SRSs or Env-Hw 400 TCLP regulatory level.
2. Background concentrations of metals in soil from report entitled "Background Metals Concentration Study New Hampshire Soils", prepared for NH DES by Sanborn, Head & Associates, Inc., dated November 1998.
3. Samples collected from borings advanced by hand Geoprobe.



RANSOM
Consulting Engineers and Scientists

Regional Locator Map

Notes

1. Data Source: USGS National Map Seamless Server, 24K DRG, 1/3" NED
2. USGS Quad Name: Portsmouth
3. Latitude: 43° 5' 10" N
   Longitude: 70° 46' 46" W
   UTM Northing: 4771920 mN
   UTM Easting: 355149 mE

Scale and Orientation

0 1,000 2,000

1 inch = 2,000 feet

Prepared For

City of Portsmouth
Department of Public Works
1 Junkins Avenue
Portsmouth, New Hampshire

Site Address

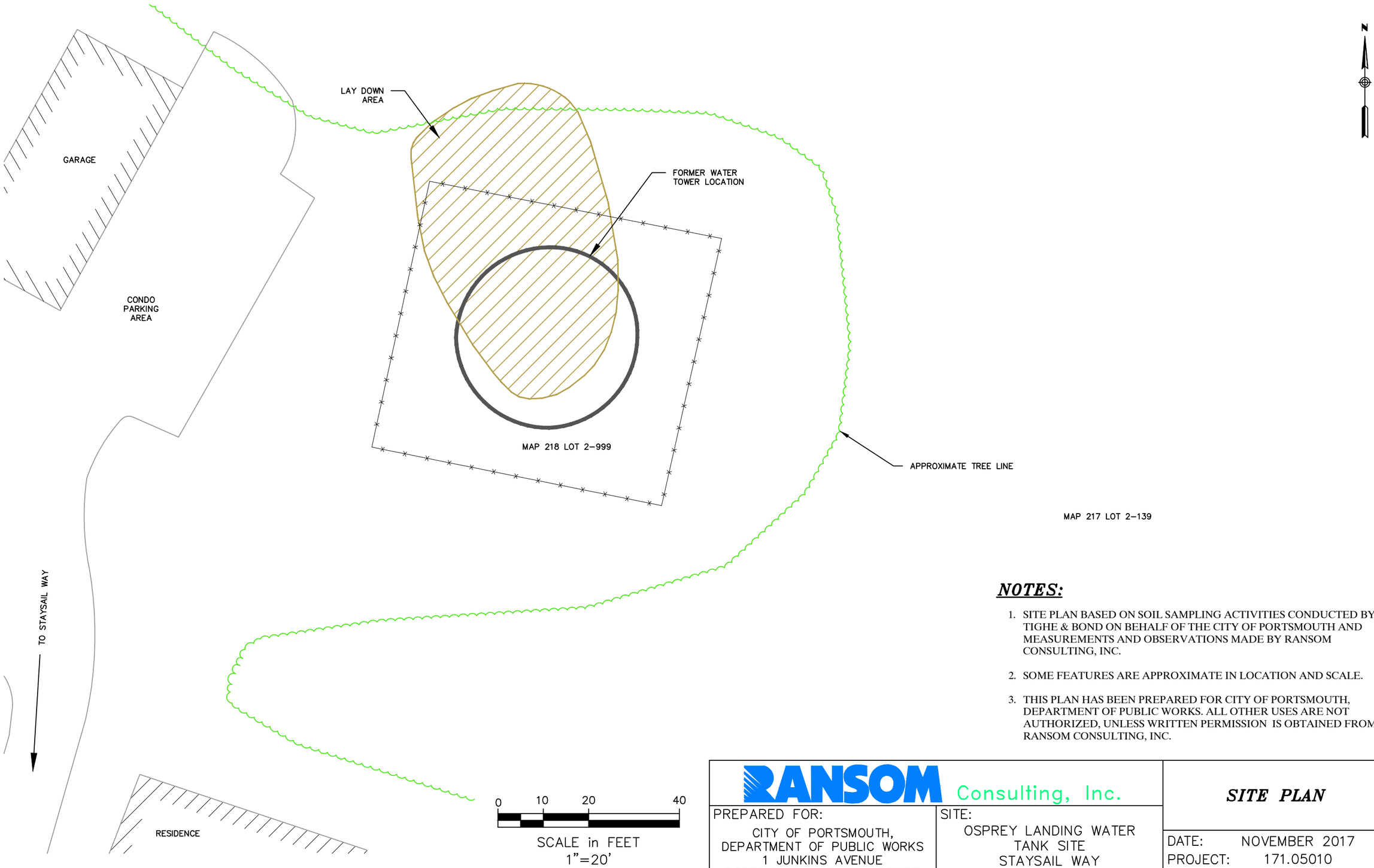
Osprey Landing Water
Tank Site
Staysail Way
Portsmouth, New Hampshire

171.05010 | Nov 2017

Figure 1

Site Location Map

G:\Data\NH\Project\171_05010\Maps\Figure_1.mxd



NOTES:

1. SITE PLAN BASED ON SOIL SAMPLING ACTIVITIES CONDUCTED BY TIGHE & BOND ON BEHALF OF THE CITY OF PORTSMOUTH AND MEASUREMENTS AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.
3. THIS PLAN HAS BEEN PREPARED FOR CITY OF PORTSMOUTH, DEPARTMENT OF PUBLIC WORKS. ALL OTHER USES ARE NOT AUTHORIZED, UNLESS WRITTEN PERMISSION IS OBTAINED FROM RANSOM CONSULTING, INC.

RANSOM Consulting, Inc.

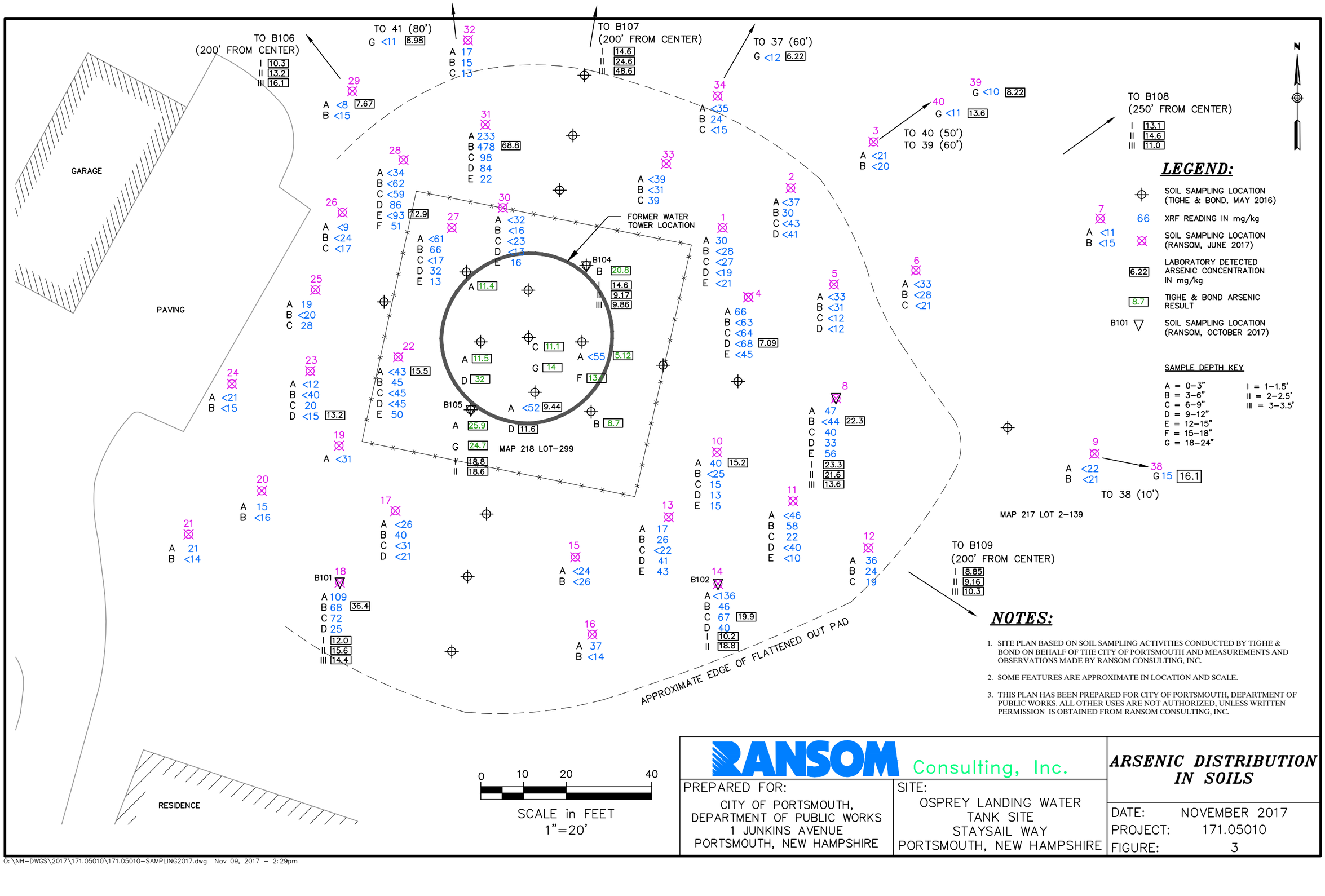
PREPARED FOR:
CITY OF PORTSMOUTH,
DEPARTMENT OF PUBLIC WORKS
1 JUNKINS AVENUE
PORTSMOUTH, NEW HAMPSHIRE

SITE:
OSPREY LANDING WATER
TANK SITE
STAYSAIL WAY
PORTSMOUTH, NEW HAMPSHIRE

SITE PLAN

DATE: NOVEMBER 2017
PROJECT: 171.05010
FIGURE: 2

O:\NH-DWGS\2017\171.05010\171.05010-SITE.dwg Nov 06, 2017 - 12:27pm



LEGEND:

- SOIL SAMPLING LOCATION (TIGHE & BOND, MAY 2016)
- 66 — XRF READING IN mg/kg
- SOIL SAMPLING LOCATION (RANSOM, JUNE 2017)
- 6.22 — LABORATORY DETECTED ARSENIC CONCENTRATION IN mg/kg
- 8.7 — TIGHE & BOND ARSENIC RESULT
- B101 — SOIL SAMPLING LOCATION (RANSOM, OCTOBER 2017)

SAMPLE DEPTH KEY

A = 0–3" I = 1–1.5'
B = 3–6" II = 2–2.5'
C = 6–9" III = 3–3.5'
D = 9–12"
E = 12–15"
F = 15–18"
G = 18–24"

NOTES:

1. SITE PLAN BASED ON SOIL SAMPLING ACTIVITIES CONDUCTED BY TIGHE & BOND ON BEHALF OF THE CITY OF PORTSMOUTH AND MEASUREMENTS AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.
3. THIS PLAN HAS BEEN PREPARED FOR CITY OF PORTSMOUTH, DEPARTMENT OF PUBLIC WORKS. ALL OTHER USES ARE NOT AUTHORIZED, UNLESS WRITTEN PERMISSION IS OBTAINED FROM RANSOM CONSULTING, INC.

RANSOM Consulting, Inc.

PREPARED FOR:
CITY OF PORTSMOUTH,
DEPARTMENT OF PUBLIC WORKS
1 JUNKINS AVENUE
PORTSMOUTH, NEW HAMPSHIRE

SITE:
OSPREY LANDING WATER
TANK SITE
STAYSAIL WAY
PORTSMOUTH, NEW HAMPSHIRE

ARSENIC DISTRIBUTION IN SOILS

DATE: NOVEMBER 2017
PROJECT: 171.05010
FIGURE: 3

O:\NH-DWGS\2017\171.05010\171.05010-SAMPLING2017.dwg Nov 09, 2017 - 2:29pm

APPENDIX A

Laboratory Reports

Supplemental Subsurface Investigation
Osprey Landing Water Tank Site
Staysail Way
Portsmouth, New Hampshire

ANALYTICAL REPORT

Lab Number:	L1736660
Client:	Ransom Consulting, Inc. 112 Corporate Drive Pease International Tradeport Portsmouth, NH 03801
ATTN:	Jay Johonnett
Phone:	(603) 436-1490
Project Name:	OSPREY LANDING
Project Number:	171.05010.001
Report Date:	10/19/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1736660
Report Date: 10/19/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1736660-01	ORANGE PAINT CHIPS	SOLID	PORTSMOUTH, NH	10/10/17 12:00	10/11/17
L1736660-02	BLUE PAINT CHIPS	SOLID	PORTSMOUTH, NH	10/10/17 12:00	10/11/17

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1736660
Report Date: 10/19/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1736660
Report Date: 10/19/17

Case Narrative (continued)

Report Submission

Please note that this report format does not contain typical QC parameters that were performed with these samples. As such, any QC outliers or non-conformances can only be reviewed by accessing your Alpha Customer Center account at www.alphalab.com and building a Data Usability table (format 11) in our Data Merger tool.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps

Title: Technical Director/Representative

Date: 10/19/17

METALS

Project Name: OSPREY LANDING
Lab Number: L1736660
Project Number: 171.05010.001
Report Date: 10/19/17

SAMPLE RESULTS

Lab ID: L1736660-01
Client ID: ORANGE PAINT CHIPS
Sample Location: PORTSMOUTH, NH
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Date Collected: 10/10/17 12:00
Date Received: 10/11/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	8.8		mg/kg	0.49	--	10	10/14/17 06:50	10/17/17 17:45	EPA 3050B	1,6020A	AM
Lead, Total	87000		mg/kg	59	--	1000	10/14/17 06:50	10/18/17 10:44	EPA 3050B	1,6020A	AM

Project Name: OSPREY LANDING
Project Number: 171.05010.001
Lab Number: L1736660
Report Date: 10/19/17

SAMPLE RESULTS

Lab ID: L1736660-02
Client ID: BLUE PAINT CHIPS
Sample Location: PORTSMOUTH, NH
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Date Collected: 10/10/17 12:00
Date Received: 10/11/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/kg	0.61	--	10	10/14/17 06:50	10/17/17 17:49	EPA 3050B	1,6020A	AM
Lead, Total	190		mg/kg	0.74	--	10	10/14/17 06:50	10/17/17 17:49	EPA 3050B	1,6020A	AM

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1736660
Report Date: 10/19/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736660-01A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.3	Y	Absent		PB-6020T(180),AS-6020T(180)
L1736660-02A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.3	Y	Absent		PB-6020T(180),AS-6020T(180)

*Values in parentheses indicate holding time in days

Project Name:	OSPREY LANDING	**Lab Number:**	L1736660
Project Number:	171.05010.001	**Report Date:**	10/19/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report - No QC

Project Name:	OSPREY LANDING	**Lab Number:**	L1736660
Project Number:	171.05010.001	**Report Date:**	10/19/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: DU Report - No QC

Project Name:	OSPREY LANDING	**Lab Number:**	L1736660
Project Number:	171.05010.001	**Report Date:**	10/19/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
World Class Chemistry
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 10/11/17

ALPHA Job #: L1736660

Project Information

Project Name: Osprey Landing

Project Location: Portsmouth NH

Project #: 171.05010.001

Project Manager: Jay Johonett

ALPHA Quote #:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #: 10460

Client Information

Client: Ransom Consulting Inc

Address: 112 Corporate Dr, Portsmouth, NH 03801

Phone: 603-436-1490

Email: jay.johonett@ransomenv.com
cc: srickerich@ransomenv.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ______ Criteria ______

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

We would like to see reporting limits of:
< 400 mg/kg for Lead; and
< 11 mg/kg for Arsenic.

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Total Lead + Arsenic

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Lead + Arsenic	Sample Comments	TOTAL # BOTTLES
36660-01	Orange Paint Chips	10-10-17	12:00	paint chips	DAF	X	paint chips	1
02	Blue Paint Chips	10-10-17	12:00	paint chips	DAF	X	paint chips	1
Container Type						A		
Preservative						A		

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-10-17/13:30	[signature] AAL	10/11/17 13:30
[signature] AAL	10/11/17/1445	[signature]	10/11/17 1445
[signature]	10/11/17	[signature]	10/11/17 16:25

ANALYTICAL REPORT

Lab Number:	L1737271
Client:	Ransom Consulting, Inc. 112 Corporate Drive Pease International Tradeport Portsmouth, NH 03801
ATTN:	Jay Johonnett
Phone:	(603) 436-1490
Project Name:	OSPREY LANDING
Project Number:	171.05010.001
Report Date:	10/24/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1737271-01	B101 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 08:15	10/16/17
L1737271-02	B101 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 08:20	10/16/17
L1737271-03	B101 (3-3.5)	SOIL	PORTSMOUTH, NH	10/13/17 08:25	10/16/17
L1737271-04	B102 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 08:40	10/16/17
L1737271-05	B102 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 08:45	10/16/17
L1737271-06	B103 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 09:20	10/16/17
L1737271-07	B103 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 09:25	10/16/17
L1737271-08	B103 (3-3.5)	SOIL	PORTSMOUTH, NH	10/13/17 09:30	10/16/17
L1737271-09	B104 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 09:50	10/16/17
L1737271-10	B104 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 09:55	10/16/17
L1737271-11	B104 (3-3.5)	SOIL	PORTSMOUTH, NH	10/13/17 10:00	10/16/17
L1737271-12	B105 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 10:15	10/16/17
L1737271-13	B105 (3-3.5)	SOIL	PORTSMOUTH, NH	10/13/17 10:20	10/16/17
L1737271-14	B106 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 10:45	10/16/17
L1737271-15	B106 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 10:50	10/16/17
L1737271-16	B106 (3-3.5)	SOIL	PORTSMOUTH, NH	10/13/17 10:55	10/16/17
L1737271-17	B107 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 11:10	10/16/17
L1737271-18	B107 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 11:15	10/16/17
L1737271-19	B107 (3-3.5)	SOIL	PORTSMOUTH, NH	10/13/17 11:20	10/16/17
L1737271-20	B108 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 11:30	10/16/17
L1737271-21	B108 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 11:35	10/16/17
L1737271-22	B108 (3-3.5)	SOIL	PORTSMOUTH, NH	10/13/17 11:40	10/16/17
L1737271-23	B109 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 11:50	10/16/17
L1737271-24	B109 (2-2.5)	SOIL	PORTSMOUTH, NH	10/13/17 11:55	10/16/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1737271-25	B109 (3-3.5)	SOIL	PORTSMOUTH, NH	10/13/17 12:00	10/16/17
L1737271-26	B102 (2.5-3)	SOIL	PORTSMOUTH, NH	10/13/17 08:50	10/16/17
L1737271-27	B105 (1-1.5)	SOIL	PORTSMOUTH, NH	10/13/17 10:10	10/16/17

Project Name:	OSPREY LANDING	**Lab Number:**	L1737271
Project Number:	171.05010.001	**Report Date:**	10/24/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	OSPREY LANDING	**Lab Number:**	L1737271
Project Number:	171.05010.001	**Report Date:**	10/24/17

Case Narrative (continued)

Report Submission

Please note that this report format does not contain typical QC parameters that were performed with these samples. As such, any QC outliers or non-conformances can only be reviewed by accessing your Alpha Customer Center account at www.alphalab.com and building a Data Usability table (format 11) in our Data Merger tool.

Total Metals

The WG1053791-3 MS recovery for iron (12000%), performed on L1737271-01, does not apply because the sample concentration is greater than four times the spike amount added.

The WG1053791-3 MS recovery, performed on L1737271-01, is outside the acceptance criteria for lead (71%). A post digestion spike was performed and yielded an unacceptable recovery of 75%. This has been attributed to sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 10/24/17

METALS

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-01
Client ID: B101 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 92%

Date Collected: 10/13/17 08:15
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.0		mg/kg	0.415	--	1	10/18/17 21:07	10/23/17 22:47	EPA 3050B	1,6010C	AB
Iron, Total	26100		mg/kg	20.8	--	10	10/18/17 21:07	10/24/17 01:43	EPA 3050B	1,6010C	AB
Lead, Total	15.3		mg/kg	2.08	--	1	10/18/17 21:07	10/23/17 22:47	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-02
Client ID: B101 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 87%

Date Collected: 10/13/17 08:20
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	15.6		mg/kg	0.437	--	1	10/18/17 21:07	10/23/17 23:25	EPA 3050B	1,6010C	AB
Iron, Total	32400		mg/kg	21.9	--	10	10/18/17 21:07	10/24/17 02:19	EPA 3050B	1,6010C	AB
Lead, Total	47.5		mg/kg	2.19	--	1	10/18/17 21:07	10/23/17 23:25	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-03
Client ID: B101 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 91%

Date Collected: 10/13/17 08:25
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	14.4		mg/kg	0.423	--	1	10/18/17 21:07	10/23/17 23:30	EPA 3050B	1,6010C	AB
Iron, Total	48800		mg/kg	21.2	--	10	10/18/17 21:07	10/24/17 02:24	EPA 3050B	1,6010C	AB
Lead, Total	10.7		mg/kg	2.12	--	1	10/18/17 21:07	10/23/17 23:30	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-04
Client ID: B102 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 96%

Date Collected: 10/13/17 08:40
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	10.2		mg/kg	0.402	--	1	10/18/17 21:07	10/23/17 23:35	EPA 3050B	1,6010C	AB
Iron, Total	24500		mg/kg	20.1	--	10	10/18/17 21:07	10/24/17 02:42	EPA 3050B	1,6010C	AB
Lead, Total	16.2		mg/kg	2.01	--	1	10/18/17 21:07	10/23/17 23:35	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-05
Client ID: B102 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 10/13/17 08:45
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	18.8		mg/kg	0.419	--	1	10/18/17 21:07	10/23/17 23:40	EPA 3050B	1,6010C	AB
Iron, Total	23400		mg/kg	20.9	--	10	10/18/17 21:07	10/24/17 02:28	EPA 3050B	1,6010C	AB
Lead, Total	30.9		mg/kg	2.09	--	1	10/18/17 21:07	10/23/17 23:40	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010.001
Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-06
Client ID: B103 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 97%

Date Collected: 10/13/17 09:20
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	23.3		mg/kg	0.401	--	1	10/18/17 21:07	10/23/17 23:45	EPA 3050B	1,6010C	AB
Iron, Total	32800		mg/kg	20.0	--	10	10/18/17 21:07	10/24/17 02:33	EPA 3050B	1,6010C	AB
Lead, Total	16.1		mg/kg	2.00	--	1	10/18/17 21:07	10/23/17 23:45	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-07
Client ID: B103 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 96%

Date Collected: 10/13/17 09:25
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	21.6		mg/kg	0.395	--	1	10/18/17 21:07	10/24/17 00:13	EPA 3050B	1,6010C	AB
Iron, Total	30000		mg/kg	19.8	--	10	10/18/17 21:07	10/24/17 02:37	EPA 3050B	1,6010C	AB
Lead, Total	16.1		mg/kg	1.98	--	1	10/18/17 21:07	10/24/17 00:13	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-08
Client ID: B103 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 94%

Date Collected: 10/13/17 09:30
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	13.6		mg/kg	0.843	--	2	10/18/17 21:07	10/24/17 00:23	EPA 3050B	1,6010C	AB
Iron, Total	24600		mg/kg	4.22	--	2	10/18/17 21:07	10/24/17 00:23	EPA 3050B	1,6010C	AB
Lead, Total	11.5		mg/kg	4.22	--	2	10/18/17 21:07	10/24/17 00:23	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010.001
Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-09
Client ID: B104 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 95%

Date Collected: 10/13/17 09:50
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	14.6		mg/kg	0.830	--	2	10/18/17 21:07	10/24/17 00:27	EPA 3050B	1,6010C	AB
Iron, Total	11500		mg/kg	4.15	--	2	10/18/17 21:07	10/24/17 00:27	EPA 3050B	1,6010C	AB
Lead, Total	142		mg/kg	4.15	--	2	10/18/17 21:07	10/24/17 00:27	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-10
Client ID: B104 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 96%

Date Collected: 10/13/17 09:55
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	9.17		mg/kg	0.803	--	2	10/18/17 21:07	10/24/17 00:32	EPA 3050B	1,6010C	AB
Iron, Total	22900		mg/kg	4.01	--	2	10/18/17 21:07	10/24/17 00:32	EPA 3050B	1,6010C	AB
Lead, Total	23.4		mg/kg	4.01	--	2	10/18/17 21:07	10/24/17 00:32	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-11
Client ID: B104 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 96%

Date Collected: 10/13/17 10:00
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	9.86		mg/kg	0.826	--	2	10/18/17 21:07	10/24/17 00:36	EPA 3050B	1,6010C	AB
Iron, Total	24200		mg/kg	4.13	--	2	10/18/17 21:07	10/24/17 00:36	EPA 3050B	1,6010C	AB
Lead, Total	9.64		mg/kg	4.13	--	2	10/18/17 21:07	10/24/17 00:36	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-12
Client ID: B105 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 92%

Date Collected: 10/13/17 10:15
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	18.8		mg/kg	0.845	--	2	10/18/17 21:07	10/24/17 00:41	EPA 3050B	1,6010C	AB
Iron, Total	26600		mg/kg	4.22	--	2	10/18/17 21:07	10/24/17 00:41	EPA 3050B	1,6010C	AB
Lead, Total	30.6		mg/kg	4.22	--	2	10/18/17 21:07	10/24/17 00:41	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-13
Client ID: B105 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 90%

Date Collected: 10/13/17 10:20
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	18.6		mg/kg	0.857	--	2	10/18/17 21:07	10/24/17 00:45	EPA 3050B	1,6010C	AB
Iron, Total	28300		mg/kg	4.29	--	2	10/18/17 21:07	10/24/17 00:45	EPA 3050B	1,6010C	AB
Lead, Total	9.27		mg/kg	4.29	--	2	10/18/17 21:07	10/24/17 00:45	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-14
Client ID: B106 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 91%

Date Collected: 10/13/17 10:45
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	10.3		mg/kg	0.867	--	2	10/18/17 21:07	10/24/17 00:50	EPA 3050B	1,6010C	AB
Iron, Total	31100		mg/kg	4.34	--	2	10/18/17 21:07	10/24/17 00:50	EPA 3050B	1,6010C	AB
Lead, Total	50.9		mg/kg	4.34	--	2	10/18/17 21:07	10/24/17 00:50	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010.001
Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-15
Client ID: B106 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 94%

Date Collected: 10/13/17 10:50
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	13.2		mg/kg	0.822	--	2	10/18/17 21:07	10/24/17 01:13	EPA 3050B	1,6010C	AB
Iron, Total	21900		mg/kg	4.11	--	2	10/18/17 21:07	10/24/17 01:13	EPA 3050B	1,6010C	AB
Lead, Total	12.0		mg/kg	4.11	--	2	10/18/17 21:07	10/24/17 01:13	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-16
Client ID: B106 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 97%

Date Collected: 10/13/17 10:55
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	16.1		mg/kg	0.826	--	2	10/18/17 21:07	10/24/17 01:17	EPA 3050B	1,6010C	AB
Iron, Total	21400		mg/kg	4.13	--	2	10/18/17 21:07	10/24/17 01:17	EPA 3050B	1,6010C	AB
Lead, Total	7.77		mg/kg	4.13	--	2	10/18/17 21:07	10/24/17 01:17	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-17
Client ID: B107 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 90%

Date Collected: 10/13/17 11:10
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	14.6		mg/kg	0.869	--	2	10/18/17 21:07	10/24/17 01:24	EPA 3050B	1,6010C	AB
Iron, Total	21000		mg/kg	4.34	--	2	10/18/17 21:07	10/24/17 01:24	EPA 3050B	1,6010C	AB
Lead, Total	16.8		mg/kg	4.34	--	2	10/18/17 21:07	10/24/17 01:24	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-18
Client ID: B107 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 97%

Date Collected: 10/13/17 11:15
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	24.6		mg/kg	0.818	--	2	10/18/17 21:07	10/24/17 01:29	EPA 3050B	1,6010C	AB
Iron, Total	12600		mg/kg	4.09	--	2	10/18/17 21:07	10/24/17 01:29	EPA 3050B	1,6010C	AB
Lead, Total	7.00		mg/kg	4.09	--	2	10/18/17 21:07	10/24/17 01:29	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-19
Client ID: B107 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 97%

Date Collected: 10/13/17 11:20
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	48.6		mg/kg	0.815	--	2	10/18/17 21:07	10/24/17 01:34	EPA 3050B	1,6010C	AB
Iron, Total	21600		mg/kg	4.08	--	2	10/18/17 21:07	10/24/17 01:34	EPA 3050B	1,6010C	AB
Lead, Total	20.0		mg/kg	4.08	--	2	10/18/17 21:07	10/24/17 01:34	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-20
Client ID: B108 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 89%

Date Collected: 10/13/17 11:30
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	13.1		mg/kg	0.872	--	2	10/18/17 21:07	10/24/17 01:38	EPA 3050B	1,6010C	AB
Iron, Total	21000		mg/kg	4.36	--	2	10/18/17 21:07	10/24/17 01:38	EPA 3050B	1,6010C	AB
Lead, Total	8.48		mg/kg	4.36	--	2	10/18/17 21:07	10/24/17 01:38	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Project Number: 171.05010.001
Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-21
Client ID: B108 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 96%

Date Collected: 10/13/17 11:35
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	14.6		mg/kg	0.409	--	1	10/18/17 22:20	10/23/17 17:15	EPA 3050B	1,6010C	PS
Iron, Total	12600		mg/kg	2.04	--	1	10/18/17 22:20	10/23/17 17:15	EPA 3050B	1,6010C	PS
Lead, Total	6.54		mg/kg	2.04	--	1	10/18/17 22:20	10/23/17 17:15	EPA 3050B	1,6010C	PS

Project Name: OSPREY LANDING
Project Number: 171.05010.001
Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-22
Client ID: B108 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 97%

Date Collected: 10/13/17 11:40
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	11.0		mg/kg	0.398	--	1	10/18/17 22:20	10/23/17 18:17	EPA 3050B	1,6010C	AB
Iron, Total	11600		mg/kg	1.99	--	1	10/18/17 22:20	10/23/17 18:17	EPA 3050B	1,6010C	AB
Lead, Total	4.21		mg/kg	1.99	--	1	10/18/17 22:20	10/23/17 18:17	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-23
Client ID: B109 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 10/13/17 11:50
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	8.85		mg/kg	0.422	--	1	10/18/17 22:20	10/23/17 18:21	EPA 3050B	1,6010C	AB
Iron, Total	27600		mg/kg	21.1	--	10	10/18/17 22:20	10/23/17 19:38	EPA 3050B	1,6010C	AB
Lead, Total	9.19		mg/kg	2.11	--	1	10/18/17 22:20	10/23/17 18:21	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-24
Client ID: B109 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 96%

Date Collected: 10/13/17 11:55
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	9.16		mg/kg	0.409	--	1	10/18/17 22:20	10/23/17 18:26	EPA 3050B	1,6010C	AB
Iron, Total	17300		mg/kg	2.04	--	1	10/18/17 22:20	10/23/17 18:26	EPA 3050B	1,6010C	AB
Lead, Total	6.83		mg/kg	2.04	--	1	10/18/17 22:20	10/23/17 18:26	EPA 3050B	1,6010C	AB

Project Name: OSPREY LANDING
Lab Number: L1737271
Project Number: 171.05010.001
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-25
Client ID: B109 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil
Percent Solids: 98%

Date Collected: 10/13/17 12:00
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	10.3		mg/kg	0.405	--	1	10/18/17 22:20	10/23/17 18:30	EPA 3050B	1,6010C	AB
Iron, Total	15000		mg/kg	2.02	--	1	10/18/17 22:20	10/23/17 18:30	EPA 3050B	1,6010C	AB
Lead, Total	5.34		mg/kg	2.02	--	1	10/18/17 22:20	10/23/17 18:30	EPA 3050B	1,6010C	AB

INORGANICS
&
MISCELLANEOUS

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-01
Client ID: B101 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 08:15
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.2		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-02
Client ID: B101 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 08:20
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.0		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-03
Client ID: B101 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 08:25
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.4		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-04
Client ID: B102 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 08:40
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.1		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-05
Client ID: B102 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 08:45
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.9		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-06
Client ID: B103 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 09:20
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.5		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-07
Client ID: B103 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 09:25
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.8		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-08
Client ID: B103 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 09:30
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.5		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-09
Client ID: B104 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 09:50
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.3		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-10
Client ID: B104 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 09:55
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.6		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-11
Client ID: B104 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 10:00
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.5		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-12
Client ID: B105 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 10:15
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.4		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-13
Client ID: B105 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 10:20
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.8		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-14
Client ID: B106 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 10:45
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.2		%	0.100	NA	1	-	10/20/17 13:44	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-15
Client ID: B106 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 10:50
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.1		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-16
Client ID: B106 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 10:55
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.9		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-17
Client ID: B107 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 11:10
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.1		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-18
Client ID: B107 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 11:15
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.0		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-19
Client ID: B107 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 11:20
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.2		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-20
Client ID: B108 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 11:30
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.0		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-21
Client ID: B108 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 11:35
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.9		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-22
Client ID: B108 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 11:40
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.5		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-23
Client ID: B109 (1-1.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 11:50
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.6		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-24
Client ID: B109 (2-2.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 11:55
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.4		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

SAMPLE RESULTS

Lab ID: L1737271-25
Client ID: B109 (3-3.5)
Sample Location: PORTSMOUTH, NH
Matrix: Soil

Date Collected: 10/13/17 12:00
Date Received: 10/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.7		%	0.100	NA	1	-	10/20/17 13:56	121,2540G	RI

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1737271-01A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-01B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-02A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-02B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-03A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-03B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-04A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-04B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-05A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-05B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-06A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-06B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-07A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-07B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-08A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-08B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-09A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-09B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-10A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-10B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-11A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-11B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-12A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)

*Values in parentheses indicate holding time in days

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1737271-12B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-13A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-13B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-14A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-14B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-15A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-15B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-16A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-16B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-17A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-17B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-18A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-18B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-19A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-19B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-20A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-20B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-21A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-21B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-22A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-22B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-23A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-23B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-24A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-24B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-25A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		AS-TI(180),PB-TI(180),FE-TI(180)
L1737271-25B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L1737271-26A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		HOLD-METAL(180)

*Values in parentheses indicate holding time in days

Project Name: OSPREY LANDING
Project Number: 171.05010.001

Lab Number: L1737271
Report Date: 10/24/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1737271-26B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()
L1737271-27A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.0	Y	Absent		HOLD-METAL(180)
L1737271-27B	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		HOLD-WETCHEM()

*Values in parentheses indicate holding time in days

Project Name:	OSPREY LANDING	**Lab Number:**	L1737271
Project Number:	171.05010.001	**Report Date:**	10/24/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report - No QC

Project Name:	OSPREY LANDING	**Lab Number:**	L1737271
Project Number:	171.05010.001	**Report Date:**	10/24/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: DU Report - No QC

Project Name:	OSPREY LANDING	**Lab Number:**	L1737271
Project Number:	171.05010.001	**Report Date:**	10/24/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: ene ene
EPA 8260C: 1 er e en ene M d e ne e i dide Me e r e 1 er e en ene uene
EPA 8270D: i e n ene 1 i en dr ine M i e n ene 1 i en dr ine
EPA 300: r ide
EPA 6860: nd M er r e
EPA 9010: nd M A en e nide is i n
EPA 9012B: nide
EPA 9050A: e i i ndu n e
SM3500: err us r n
SM4500 A en e nide iss ved en M s rus
SM5310C: iss ved r ni r n

Mansfield Facility
SM 2540D:
EPA 3005A
EPA 8082A: 1 1 1 1 11 1 1 1 1 1 1 1
EPA TO-15: ne ri e en ene ri e 1 en ene i ene Me i ene Me i ene i ene 1 ri e en ene nd n ndene 1 er e en ene en i ene 1 Me n ene
Biological Tissue Matrix: A

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0 ir e u ride u e **EPA 353.2** ir e i ri e **SM4500NO3-F** ir e i ri e **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332 er r e **EPA 524.2:** Ms nd s **EPA 504.1:**
Microbiology SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH EPA 350.1 A ni **LACHAT 10-107-06-1-B** A ni **SM4500NO3-F, EPA 353.2** ir e , **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624 ie r ns Ar i s
EPA 608 rd ne ene A drin de ie drin nd su n nd su n nd su n su e ndrin ndrin A de de e r e r ide s
EPA 625 A id se eu r r es **EPA 600/4-81-045** i
Microbiology SM9223B-Colilert-QT; Enterolert-QT, SM9221E.

Mansfield Facility:

Drinking Water
EPA 200.7: e d r u i **EPA 200.8:** As e d r u i e **EPA 245.1**

Non-Potable Water
EPA 200.7: A As e d r u e M Mn M i e A r i n
EPA 200.8: A As e d r u Mn i e A n
EPA 245.1
SM2340B

r e e is in n es nd e ds e se n ur A r e M n er

CHAIN OF CUSTODY

PAGE 1 OF 3

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 10/16/17

ALPHA Job #: L1737271

Client Information

Client: Ransom Consulting
Address: 112 Corporate Dr
Portsmouth, NH
Phone: 603-436-1490
Email: jay.johnnett@ransomenv.com
cc: srtolerich@ransomenv.com
Additional Project Information:

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth NH
Project #: 171,05010,005
Project Manager: Jay Johnnett
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #: 10461

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Total Lead, Arsenic, Iron

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Lead, Arsenic, Iron	Sample Comments	TOTAL # BOTTLES
37271-01	B101 (1-1.5)	10-13-17	8:15	Soil	DAF	X		2
02	B101 (2-2.5)	"	8:20	"	"	X		2
03	B101 (3-3.5)	"	8:25	"	"	X		2
04	B102 (1-1.5)	"	8:40	"	"	X		2
05	B102 (2-2.5)	"	8:45	"	"	X		2
06	B103 (1-1.5)	"	9:20	"	"	X		2
07	B103 (2-2.5)	"	9:25	"	"	X		2
08	B103 (3-3.5)	"	9:30	"	"	X		2
09	B104 (1-1.5)	"	9:50	"	"	X		2
10	B104 (2-2.5)	"	9:55	"	"	X		2
	Container Type					A		
	Preservative					A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-16-17 0:00	[signature]	10/17/17 1200
[signature] DAL	10/16/17 1640	[signature]	10/16/17 1820

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab: 10/16/17

ALPHA Job #: L1737271

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: Ransom Consulting
Address: 12 Corporate Dr, Portsmouth, NH
Phone: 603-436-1490
Email: Jay.Johnson@ransomenv.com

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth, NH
Project #: 176.05010.001
Project Manager: Jay Johnson
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Additional Project Information:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #: 10461

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Total Lead, Arsenic, Trap

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	TPH: Quant Only	TOTAL # BOTTLES
37271-11	B104(3-3.5)	10-13-17	10:00	Soil	DAF	X	2
12	B105(2-2.5)	"	10:15	"	"	X	2
13	B105(3-3.5)	"	10:20	"	"	X	2
14	B106(1-1.5)	"	10:45	"	"	X	2
15	B106(2-2.5)	"	10:50	"	"	X	2
16	B106(3-3.5)	"	10:55	"	"	X	2
17	B107(1-1.5)	"	11:10	"	"	X	2
18	B107(2-2.5)	"	11:15	"	"	X	2
19	B107(3-3.5)	"	11:20	"	"	X	2
20	B108(1-1.5)	"	11:30	"	"	X	2
	Container Type					A	
	Preservative					A	

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
AAL	10/16/17 1640	AAL	10/17/17 1200
	10-16-17 12:00		10/16/17 1640

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 3 OF 3

ALPHA ANALYTICAL

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 10/16/17

ALPHA Job #: L1737271

Client Information

Client: Ransom Consulting
Address: 112 Corporate Dr, Portsmouth NH
Phone: 603-436-1490
Email: jay.johonnett@ransomenv.com

Project Information

Project Name: Osprey Landing
Project Location: Portsmouth, NH
Project #: 171.05010.001
Project Manager: Jay Johonnett
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #: 10461

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ____ Criteria ____

Additional Project Information:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Total Lead, Arsenic, Iron

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Lead, Arsenic, Iron	Sample Comments	Total # Bottles
37271-21	B108(2-2.5)	10-13-17	11:35	Soil	DAF	X		2
22	B108(3-3.5)	"	11:40	"	"	X		2
23	B109(1-1.5)	"	11:50	"	"	X		2
24	B109(2-2.5)	"	11:55	"	"	X		2
25	B109(3-3.5)	"	12:00	"	"	X		2
26	B102(2.5-3)	"	8:50	"	"	X	HOLD	2
27	B105(1-1.5)	"	10:10	"	"	X	HOLD	2
	Container Type					A		
	Preservative					A		

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-16-17/12:00	[signature] AAL	10/16/17 1200
[signature] AAL	10/16/17 1640	[signature]	10/16/17 1640

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)