Golder Associates

RECEIVED PRO
OCT 28 2015

October 22, 2015

Golder Reference No.: 043-676415

Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060

Attention: Ms. Laura Galli
DEQ Project Manager

Re: Revised Renewal Application for VPDES Individual Permit No. VA0091456
Iluka Resources - Concord Mine Concentrator Facility

Dear Ms. Galli:

On behalf of Iluka Resources Inc., Virginia Operations (Iluka), Golder Associates Inc. (Golder) is providing the updated Virginia Pollutant Discharge Elimination System (VPDES) renewal package for the Concord Mine Concentrator Facility Individual Permit No. VA0091456. The application was updated based on comments provided by Virginia Department of Environmental Quality Piedmont Regional Office on October 7, 2015. Responses to these comments are provided in italics below.

EPA Form 2C Part I. A.: DEQ has the following coordinates on file for Outfall 001: 36° 53' 40" and 77° 34' 40"; it also appears that during the previous reissuance these coordinates were determined to be most accurate. However, you have reported the following coordinates for Outfall 001: 36° 53" 44" and 77° 35' 50". Please verify the outfall coordinates and revise form 2C as necessary.

The coordinates for Outfall 001 were verified to be 36° 53' 40" and 77° 34' 40" and EPA Form 2C Part I.A. was updated.

EPA Form 2C Part I.C.: The maximum daily flow reported in the form is 3.24 MGD; however, please note that the DMR data submitted over the last four years show a maximum daily flow of 3.64 MGD (July 2013). Please revise.

The maximum daily flow was derived from data between June 2014 and July 2015 based on the Instructions of Form 2C Part I for "Long Term Average" which specify using an "average of all daily values measured during days when discharge occurred within the last year".

Based on DEQ's comment, the maximum daily flow was replaced with 3.64 MGD from July 2013 on Form 2C Part I.C.

EPA Form 2C Part V.A: Please clarify how a daily maximum concentration of 4.0 mg/L for TSS was determined. The DMR values reported over the last four years, as well as the concentration in the analytical report submitted with the application (31.6 mg/L) show higher maximum daily values that the one reported.

Outfall 001 results between June 2014 and July 2015 were used for reporting TSS at 4.0 mg/L. Based on DEQ's comment, Golder re-reviewed the last 3 years of DMRs and determined that the sample collected on April 9, 2015, had the highest concentration of TSS (31.6 mg/L). A value of 31.6 mg/L was updated on Form 2C Part V.A for TSS.

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2108 West Laburnum Avenue, Suite 200
Richmond, VA 23227 USA
Tel: (804) 358-7900 Fax: (804) 358-2900 www.golder.com

Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

The EPA ID Number (VA0091456) was not reported on Part V.A.

The EPA ID Number (VA0091456) was added to Form 2C Part V.A.

<u>EPA Form 2C Part V.C:</u> it appears that the concentrations for total arsenic and total chromium have been reported incorrectly. The laboratory reports submitted with the application show a concentration of 1.0 mg/L for total arsenic, and a concentration of 4.1 mg/L for total chromium. Please revise.

Based on DEQ's comment, Golder re-reviewed the values for total arsenic (1.0 ug/L) and total chromium (4.1 ug/L) and changed them on Form 2C Part V.C.

<u>VPDES Permit Application Addendum:</u>
Item 6 of the Addendum shows that 85% of the discharge flow derives from domestic connections, and that 15% derives from non-domestic connections. This appears to be a typo as most of the facility's discharge derives from process wastewater. Please revise.

The discharge flow in Item #6 on the VPDES Permit Application Addendum was updated to 0% domestic connections and 100% derived from non-domestic connections.

Item 7 of the Addendum indicates that the discharge is considered seasonal. Although the discharge is dependent upon rainfall events, this discharge should be considered intermittent, rather than seasonal, as rainfall events may not be related to a particular season. Please revise.

Item 7 of the VPDES Permit Application Addendum was updated to intermittent.

<u>Total Residual Chlorine:</u> Your Application cover letter states that data older than three years was reported for total residual chlorine. Please note that while the use of data older than three years is allowed for Attachment A – Water Quality Monitoring, it is not allowed for completion of EPA Form 2C. However, it appears that a sample result for this parameter was provided in the analytical report dated April 21, 2015. Therefore, this value (<0.024 mg/L) should be reported on Form 2C.

Total residual chlorine results were updated to <0.024 mg/L on EPA Form 3510-2C Part V.B.

<u>Attachment A:</u>
The concentration reported for total residual chlorine is 0.70 ug/L. However, it appears that this concentration was reported as 0.07 mg/L during the previous reissuance. Therefore, it should be reported as 70 ug/L in Attachment A.

Total residual chlorine results were updated to 70 ug/L on VPDES Permit Application Attachment A.

Please clarify the origin of the concentrations for E. Coli and dissolved sulfide reported in Attachment A, as DEQ staff was not able to locate these parameters in the lab reports submitted with the application.

The Certificate of Analysis No. 92253726 for E. Coli has been added to the VPDES permit application package. The Certificate of Analysis No. 92243396 includes total sulfide results below 0.10 mg/L which is reported which is permitted under footnote (7) of Attachment A.

Should you have any questions or require further information, please call Kevin Rideout at (804) 721-7312 or the undersigned at (804) 358-7900.

Sincerely,
GOLDER ASSOCIATES INC.

Joseph Church
Project Geologist

FOR Michael G. Williams, C.P.G.
Senior Hydrogeologist and Associate

Enclosure: Revised Renewal Application for VPDES Individual Permit No. VA0091456

Cc: Kevin Rideout, Environmental Superintendent – Iluka Resources, Inc., 12472 St. John Church Road, Stony Creek, Virginia, 23882-3239

Concord Mine Concentrator

VPDES Permit No. VA0091456
Permit Reissuance Application

ATTACHMENTS

EPA Form 3510-1

Topographic Site Location Map

VPDES Outfall Location Map

EPA Form 3510-2C

One Line Diagram

VPDES Permit Reissuance Addendum

Billing Information Form for Annual Maintenance Fee

Public Notice Billing Information

ATTACHMENT A – Water Quality Information

Certificate of Analysis

Pace Project Numbers

92243396

92245142

92253102

92254133

92253726

92244754

92244759

ENCO Project Number

C510446

EPA FORM 3510-1
Topographic Site Location Map and VPDES Outfall Location Map

Please print or type in the unshaded areas only. Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
GENERAL INFORMATION
Consolidated Permits Program
(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER: S F VA0091456 T/A C D

LABEL ITEMS	
I. EPA I.D. NUMBER	PLEASE PLACE LABEL IN THIS SPACE
III. FACILITY NAME	
V. FACILITY MAILING ADDRESS	
VI. FACILITY LOCATION	

GENERAL INSTRUCTIONS
If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)		X	
	16	17	18		19	20	21
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)		X	
	22	23	24		25	26	27
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
	28	29	30		31	32	33
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
	34	35	36		37	38	39
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	
	40	41	42		43	44	45

III. NAME OF FACILITY

C 1 SKIP: Concord Mine Concentrator (15 | 16 – 29 | 30 … 69)

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*: C 2 Rideout, Kevin, EHS Specialist (15 | 16 … 45)

B. PHONE *(area code & no.)*: (434) 348-4316 (46 … 48 | 49 … 51 | 52- … 55)

V. FACILTY MAILING ADDRESS

A. STREET OR P.O. BOX: C 3 12472 St. John Church Road (15 | 16 … 45)

B. CITY OR TOWN: C 4 Stony Creek (15 | 16 … 40)

C. STATE: VA (41 … 42)

D. ZIP CODE: 23882 (47 … 51)

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: C 5 16474 Walkers Mill Road (15 | 16 … 45)

B. COUNTY NAME: Sussex County (46 … 70)

C. CITY OR TOWN: C 6 Stony Creek (15 | 16 … 40)

D. STATE: VA (41 … 42)

E. ZIP CODE: 23882 (47 … 51)

F. COUNTY CODE *(if known)* (52 … 54)

CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
7 1081 *(specify)* Metal Mining Services	7 1099 *(specify)* Miscellaneous Metal Ores, not elsewhere classified

C. THIRD	D. FOURTH
7 *(specify)*	7 *(specify)*

VIII. OPERATOR INFORMATION

A. NAME: 8 Iluka Resources Inc

B. Is the name listed in Item VIII-A also the owner? ☑ YES ☐ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box: if "Other," specify.)*

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*

P *(specify)*

D. PHONE *(area code & no.)*: A (434) 348-4300

E. STREET OR P.O. BOX: 12472 St. John Church Road

F. CITY OR TOWN: B Stony Creek

G. STATE: VA

H. ZIP CODE: 23882

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	9 N VA0091456	D. PSD *(Air Emissions from Proposed Sources)*	9 P
B. UIC *(Underground Injection of Fluids)*	9 U	E. OTHER *(specify)*	9 VAR051396 *(specify)* General Permit for Stormwater Discharges Associates with Industrial Activity
C. RCRA *(Hazardous Wastes)*	9 R	E. OTHER *(specify)*	9 *(specify)*

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

Iluka Resources Inc. leases mining rights in Sussex County, VA for the purpose of mining and then gravity seperation of mineral sands (titanium-bearing ilemenite and zircon). The ore is removed from a shallow, unconsolidated ore body situated in the innermost Coastal Plain physiographic province near the Fall Zone (the geologic boundary between the Coastal Plain and Piedmont physiographic provinces) using dry mining techniques. The ore is then processed at the Concord Concentrator Plant using a variety of wet gravity separation methods to produce a mineral sand concentrate. The concentrate is then trucked to the Mineral Seperation Plant (MSP) located in Stony Creek, VA for further processing.

XIII. CERTIFICATION *(see instructions)*

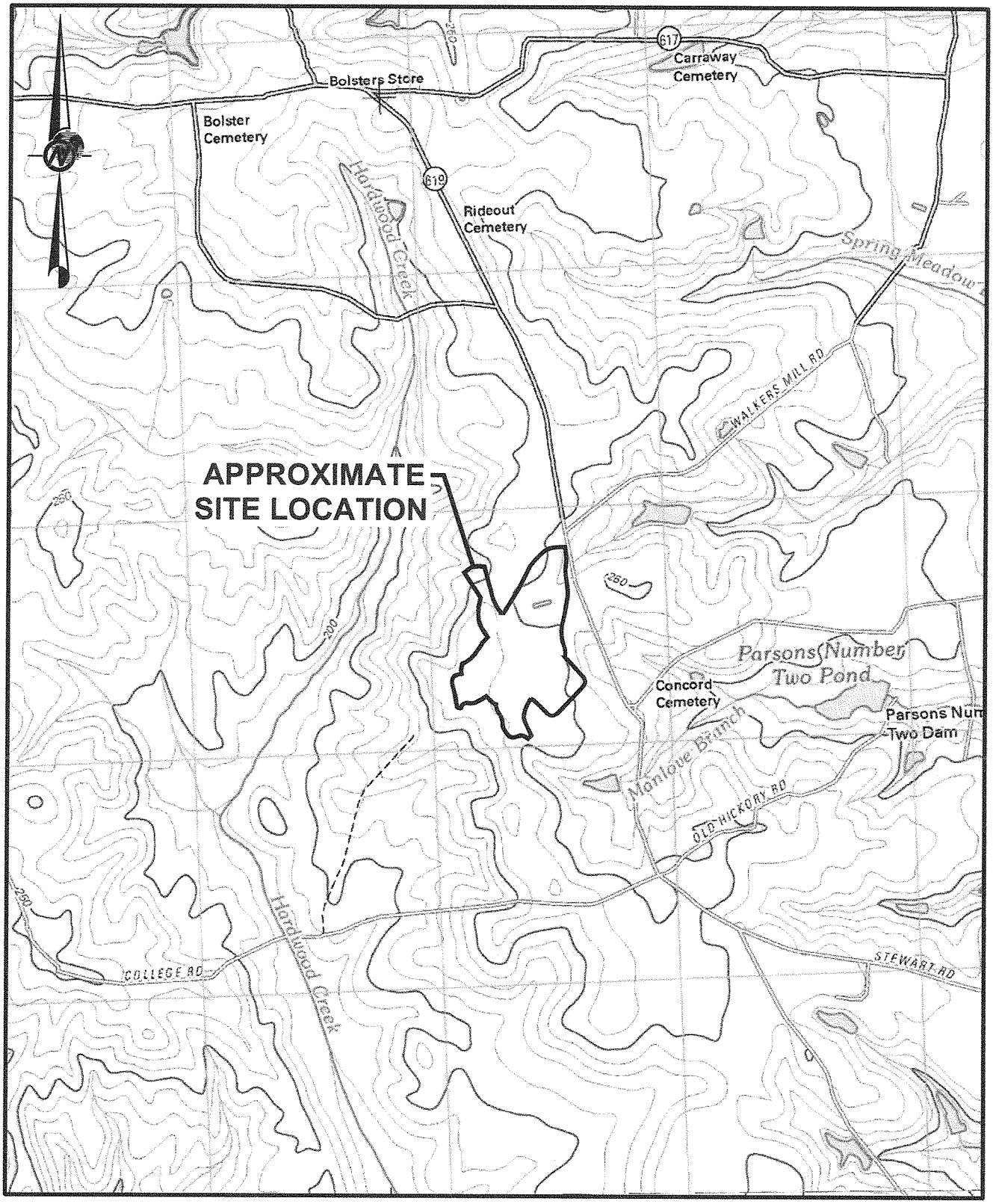
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
SHANE TILKA GENERAL MANAGER	Shane Tilka	10/26/2015

COMMENTS FOR OFFICIAL USE ONLY

C

EPA Form 3510-1 (8-90)



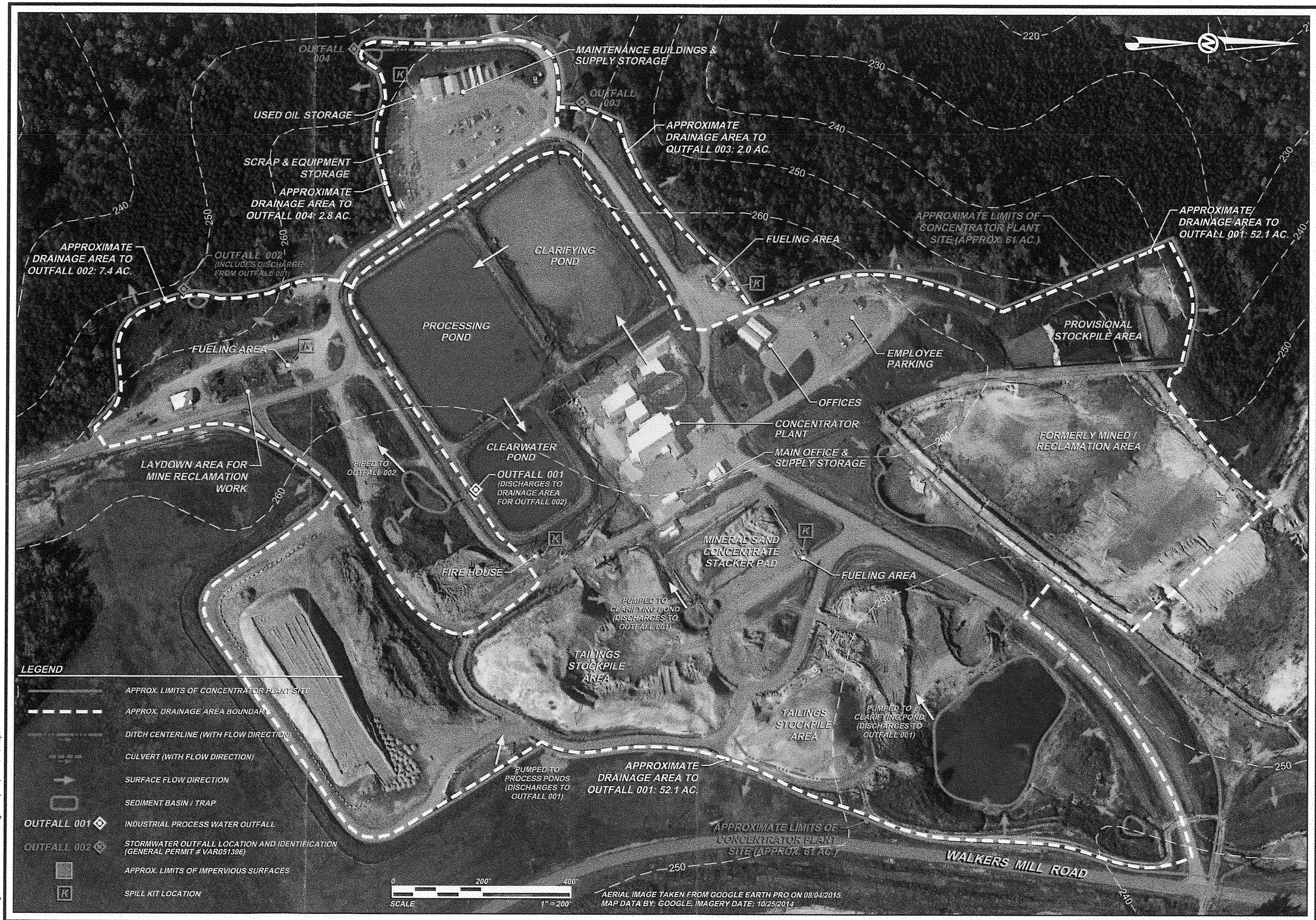
REFERENCE

Base map consists of 7.5-minute USGS topographic quadrangles Cherry Hill, VA (2010) and Purdy, VA (2010).

0 2000' 4000'
SCALE FEET

Golder Associates Richmond, Virginia	DATE 08/04/15	TITLE	
	DESIGN -	GENERAL LOCATION MAP	
	CADD BPG		
PROJECT No. 043-676415	CHECK	ILUKA RESOURCES INC. CONCORD MINE CONCENTRATOR PLANT	FIGURE 1
SCALE 1 inch = 2,000 feet REV. 0	REVIEW		

Drawing file: 043676415A01.dwg Aug 07, 2015 – 4:58pm



Golder Associates
Richmond, Virginia

PROJECT

ILUKA RESOURCES INC.
CONCORD MINE
CONCENTRATOR PLANT
STONY CREEK, VIRGINIA

TITLE

VPDES OUTFALL LOCATION MAP

PROJECT No.	043-676415	
FILE No.	043676415A02	
REV. 0	SCALE	AS SHOWN
DESIGN	-	-
CADD	BPG	08/04/15
CHECK	JMC	08/20/15
REVIEW	MGW	08/22/15

FIGURE 2

Drawing file: 043676415A02.dwg Sep 10, 2015 - 3:12pm

Please print or type in the unshaded areas only.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)
VA0091456

Form Approved.
OMB No. 2040-0086.
Approval expires 3-31-98.

FORM **2C** NPDES

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS

Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (*list*)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (*name*)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	36	53	40	77	34	40	Unnamed tributary of Hardwood Creek

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUT-FALL NO. (*list*)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (*list*)	b. AVERAGE FLOW (*include units*)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
1	Process Water	1500 GPM	Gravity Concentration in Settling Ponds	1-G	1-U
				4-C	

OFFICIAL USE ONLY (*effluent guidelines sub-categories*)

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☑ YES (*complete the following table*) ☐ NO (*go to Section III*)

1. OUTFALL NUMBER (*list*)	2. OPERATION(s) CONTRIBUTING FLOW (*list*)	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK (*specify average*)	b. MONTHS PER YEAR (*specify average*)	a. FLOW RATE (*in mgd*)		B. TOTAL VOLUME (*specify with units*)		C. DURATION (*in days*)
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
1	Process Water	1 day per week (52 Days/yr)	12 months per year	2.16 MGD	3.24 MGD	2.16 MGD	3.24 MGD	52

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☐ YES (*complete Item III-B*) ☑ NO (*go to Section IV*)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (*or other measure of operation*)?

☐ YES (*complete Item III-C*) ☑ NO (*go to Section IV*)

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS (*list outfall numbers*)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (*specify*)	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operations of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES (*complete the following table*) ☑ NO (*go to Item IV-B*)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (*or other environmental projects which may affect your discharges*) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

CONTINUED FROM PAGE 2

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
NA	N/A	N/A	N/A

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES (*list all such pollutants below*) ☑ NO (*go to Item VI-B*)

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ YES (*identify the test(s) and describe their purposes below*) ☑ NO (*go to Section VIII*)

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☑ YES (*list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below*) ☐ NO (*go to Section IX*)

A. NAME	B. ADDRESS	C. TELEPHONE (*area code & no.*)	D. POLLUTANTS ANALYZED (*list*)
Pace Analytical	9800 Kincey Ave. Suite 100 Huntersville, NC 28078	704-875-9092	EPA Form 3510 2C Section V Part A, B, and C constituents
Air, Water and Soil Laboratories Inc	1941 Reymet Road Richmond, VA 23237	804-358-8297	Some Quarerly TSS
ENCO Laboratories	102-A Woodwinds Industrial Court Cary, NC 27511	919-467-3090	EPA Form 3510 2C Section V Part C constituents

IX. CERTIFICATION

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

A. NAME & OFFICIAL TITLE (*type or print*)	B. PHONE NO. (*area code & no.*)
Shane Tilka GENERAL MANAGER	
C. SIGNATURE	**D. DATE SIGNED**
	10/26/2015

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (*use the same format*) instead of completing these pages.
SEE INSTRUCTIONS.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)
VA0091456

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO.

PART A –You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (*specify if blank*) a. CONCEN-TRATION	b. MASS	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (*BOD*)	<2.0						1	mg/L				
b. Chemical Oxygen Demand (*COD*)	<25.0						1	mg/L				
c. Total Organic Carbon (*TOC*)	1.9						1	mg/L				
d. Total Suspended Solids (*TSS*)	31.6				3.07		1	mg/L				
e. Ammonia (*as N*)	<0.10						1	mg/L				
f. Flow	VALUE 2.160		VALUE		VALUE .655		29	MGD		VALUE		
g. Temperature (*winter*)	VALUE 16.40		VALUE		VALUE 10.4		25	°C		VALUE		
h. Temperature (*summer*)	VALUE 28.70		VALUE		VALUE 25.9		13	°C		VALUE		
i. pH	MINIMUM 6.27	MAXIMUM 7.45	MINIMUM	MAXIMUM			38	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCEN-TRATION	b. MASS	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)	X		25.5						1	ug/L				
b. Chlorine, Total Residual	X		<0.024						1	mg/L				
c. Color		X								units				
d. Fecal Coliform	X		1.0						1	CFU				
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite (*as N*)	X		0.75						1	mg/L				

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (*as N*)	X		0.75						1	mg/L				
h. Oil and Grease		X												
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total	X		0.760						1	pCi/L				
(2) Beta, Total	X		1.12						1	pCi/L				
(3) Radium, Total	X		0.371						1	pCi/L				
(4) Radium 226, Total	X		0.625						1	pCi/L				
k. Sulfate (*as SO_4*) (14808-79-8)	X	X	8.6						1	mg/L				
l. Sulfide (*as S*)		X												
m. Sulfite (*as SO_3*) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)	X		3640						1	ug/L				
p. Barium, Total (7440-39-3)	X		24.9						1	ug/L				
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		3640						1	ug/L				
t. Magnesium, Total (7439-95-4)	X		1360						2	ug/L				
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)	X		21.9						1	ug/L				
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)	X		45.2						1	ug/L				

CONTINUE ON PAGE V-3

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
VA0091456	001

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X			<1.0						1	ug/L				
2M. Arsenic, Total (7440-38-2)	X			1.0						1	ug/L				
3M. Beryllium, Total (7440-41-7)	X			<0.10						1	ug/L				
4M. Cadmium, Total (7440-43-9)	X			<0.10						1	ug/L				
5M. Chromium, Total (7440-47-3)	X			4.1						1	ug/L				
6M. Copper, Total (7440-50-8)	X			3.2						1	ug/L				
7M. Lead, Total (7439-92-1)	X			2.0						1	ug/L				
8M. Mercury, Total (7439-97-6)	X			<0.00020						1	mg/L				
9M. Nickel, Total (7440-02-0)	X			1.1						1	ug/L				
10M. Selenium, Total (7782-49-2)	X			<1.0						1	ug/L				
11M. Silver, Total (7440-22-4)	X			<0.10						1	ug/L				
12M. Thallium, Total (7440-28-0)	X			<1.0						1	ug/L				
13M. Zinc, Total (7440-66-6)	X			11.0						1	ug/L				
14M. Cyanide, Total (57-12-5)	X			<0.010						1	mg/L				
15M. Phenols, Total	X			<0.010						1	mg/L				
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

 CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Accrolein (107-02-8)	X			<5.0						1	ug/L				
2V. Acrylonitrile (107-13-1)	X			<50.0						1	ug/L				
3V. Benzene (71-43-2)	X			<2.0						1	ug/L				
4V. Bis (*Chloro-methyl*) Ether (542-88-1)				*DELISTED 02-4-1981* ANALYSIS NOT REQUIRED FOR THIS PARAMETER											
5V. Bromoform (75-25-2)	X			<2.0						1	ug/L				
6V. Carbon Tetrachloride (56-23-5)	X			<2.0						1	ug/L				
7V. Chlorobenzene (108-90-7)	X			<2.0						1	ug/L				
8V. Chlorodi-bromomethane (124-48-1)	X			<5.0						1	ug/L				
9V. Chloroethane (75-00-3)	X			<2.0						1	ug/L				
10V. 2-Chloro-ethylvinyl Ether (110-75-8)	X			<5.0						1	ug/L				
11V. Chloroform (67-66-3)	X			<2.0						1	ug/L				
12V. Dichloro-bromomethane (75-27-4)	X			<2.0						1	ug/L				
13V. Dichloro-difluoromethane (75-71-8)				*DELISTED 01-8-1981* ANALYSIS NOT REQUIRED FOR THIS PARAMETER											
14V. 1,1-Dichloro-ethane (75-34-3)	X			<2.0						1	ug/L				
15V. 1,2-Dichloro-ethane (107-06-2)	X			<5.0						1	ug/L				
16V. 1,1-Dichloro-ethylene (75-35-4)	X			<2.0						1	ug/L				
17V. 1,2-Dichloro-propane (78-87-5)	X			<2.0						1	ug/L				
18V. 1,3-Dichloro-propylene (542-75-6)	X			<0.20						1	ug/L				
19V. Ethylbenzene (100-41-4)	X			<2.0						1	ug/L				
20V. Methyl Bromide (74-83-9)	X			<10.0						1	ug/L				
21V. Methyl Chloride (74-87-3)	X			<5.0						1	ug/L				

CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS (*continued*)															
22V. Methylene Chloride (75-09-2)	X			<2.0						1	ug/L				
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X			<5.0						1	ug/L				
24V. Tetrachloro-ethylene (127-18-4)	X			<5.0						1	ug/L				
25V. Toluene (108-88-3)	X			<2.0						1	ug/L				
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X			<5.0						1	ug/L				
27V. 1,1,1-Trichloro-ethane (71-55-6)	X			<2.0						1	ug/L				
28V. 1,1,2-Trichloro-ethane (79-00-5)	X			<2.0						1	ug/L				
29V Trichloro-ethylene (79-01-6)	X			<5.0						1	ug/L				
30V. Trichloro-fluoromethane (75-69-4)				*DELISTED 01-8-1981* ANALYSIS NOT REQUIRED FOR THIS PARAMETER											
31V. Vinyl Chloride (75-01-4)	X			<2.0						1	ug/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	X			<5.0						1	ug/L				
2A. 2,4-Dichloro-phenol (120-83-2)	X			<5.0						1	ug/L				
3A. 2,4-Dimethyl-phenol (105-67-9)	X			<5.0						1	ug/L				
4A. 4,6-Dinitro-O-Cresol (534-52-1)	X			<20.0						1	ug/L				
5A. 2,4-Dinitro-phenol (51-28-5)	X			<5.0						1	ug/L				
6A. 2-Nitrophenol (88-75-5)	X			<5.0						1	ug/L				
7A. 4-Nitrophenol (100-02-7)	X			<50.0						1	ug/L				
8A. P-Chloro-M-Cresol (59-50-7)	X			<5.0						1	ug/L				
9A. Pentachloro-phenol (87-86-5)	X			<10.0						1	ug/L				
10A. Phenol (108-95-2)	X			<5.0						1	ug/L				
11A. 2,4,6-Trichloro-phenol (88-05-2)	X			<5.0						1	ug/L				

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	X			<5.0						1	ug/L				
2B. Acenaphtylene (208-96-8)	X			<5.0						1	ug/L				
3B. Anthracene (120-12-7)	X			<5.0						1	ug/L				
4B. Benzidine (92-87-5)	X			<1.6						1	ug/L				
5B. Benzo (*a*) Anthracene (56-55-3)	X			<5.0						1	ug/L				
6B. Benzo (*a*) Pyrene (50-32-8)	X			<5.0						1	ug/L				
7B. 3,4-Benzo-fluoranthene (205-99-2)	X			<5.0						1	ug/L				
8B. Benzo (*ghi*) Perylene (191-24-2)	X			<5.0						1	ug/L				
9B. Benzo (*k*) Fluoranthene (207-08-9)	X			<5.0						1	ug/L				
10B. Bis (*2-Chloro-ethoxy*) Methane (111-91-1)	X			<10.0						1	ug/L				
11B. Bis (*2-Chloro-ethyl*) Ether (111-44-4)	X			<5.0						1	ug/L				
12B. Bis (*2-Chloroisopropyl*) Ether (102-80-1)	X			<5.0						1	ug/L				
13B. Bis (*2-Ethyl-hexyl*) Phthalate (117-81-7)	X			<5.0						1	ug/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	X			<5.0						1	ug/L				
15B. Butyl Benzyl Phthalate (85-68-7)	X			<5.0						1	ug/L				
16B. 2-Chloro-naphthalene (91-58-7)	X			<5.0						1	ug/L				
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	X			<5.0						1	ug/L				
18B. Chrysene (218-01-9)	X			<5.0						1	ug/L				
19B. Dibenzo (*a,h*) Anthracene (53-70-3)	X			<5.0						1	ug/L				
20B. 1,2-Dichloro-benzene (95-50-1)	X			<2.0						1	ug/L				
21B. 1,3-Di-chloro-benzene (541-73-1)	X			<2.0						1	ug/L				

 CONTINUE ON PAGE V-7

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1,4-Dichloro-benzene (106-46-7)	X			<0.20						1	ug/L				
23B. 3,3-Dichloro-benzidine (91-94-1)	X			<25.0						1	ug/L				
24B. Diethyl Phthalate (84-66-2)	X			<5.0						1	ug/L				
25B. Dimethyl Phthalate (131 -11-3)	X			<5.0						1	ug/L				
26B. Di-N-Butyl Phthalate (84-74-2)	X			<5.0						1	ug/L				
27B. 2,4-Dinitro-toluene (121-14-2)	X			<5.0						1	ug/L				
28B. 2,6-Dinitro-toluene (606-20-2)	X			<5.0						1	ug/L				
29B. Di-N-Octyl Phthalate (117-84-0)	X			<5.0						1	ug/L				
30B. 1,2-Diphenyl-hydrazine (*as Azo-benzene*) (122-66-7)	X			<1.4						1	ug/L				
31B. Fluoranthene (206-44-0)	X			<5.0						1	ug/L				
32B. Fluorene (86-73-7)	X			<5.0						1	ug/L				
33B. Hexachloro-benzene (118-74-1)	X			<5.0						1	ug/L				
34B. Hexachloro-butadiene (87-68-3)	X			<5.0						1	ug/L				
35B. Hexachloro-cyclopentadiene (77-47-4)	X			<10.0						1	ug/L				
36B Hexachloro-ethane (67-72-1)	X			<5.0						1	ug/L				
37B. Indeno (*1,2,3-cd*) Pyrene (193-39-5)	X			<5.0						1	ug/L				
38B. Isophorone (78-59-1)	X			<10.0						1	ug/L				
39B. Naphthalene (91-20-3)	X			<5.0						1	ug/L				
40B. Nitrobenzene (98-95-3)	X			<5.0						1	ug/L				
41B. N-Nitro-sodimethylamine (62-75-9)	X			<10.0						1	ug/L				
42B. N-Nitrosodi-N-Propylamine (621-64-7)	X			<5.0						1	ug/L				

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
43B. N-Nitro-sodiphenylamine (86-30-6)	X			<10.0						1	ug/L				
44B. Phenanthrene (85-01-8)	X			<5.0						1	ug/L				
45B. Pyrene (129-00-0)	X			<5.0						1	ug/L				
46B. 1,2,4-Tri-chlorobenzene (120-82-1)	X			<5.0						1	ug/L				
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)	X			<0.050						1	ug/L				
2P. α-BHC (319-84-6)	X			<0.050						1	ug/L				
3P. β-BHC (319-85-7)	X			<0.050						1	ug/L				
4P. γ-BHC (58-89-9)	X			<0.050						1	ug/L				
5P. δ-BHC (319-86-8)	X			<0.050						1	ug/L				
6P. Chlordane (57-74-9)	X			<0.050						1	ug/L				
7P. 4,4'-DDT (50-29-3)	X			<0.050						1	ug/L				
8P. 4,4'-DDE (72-55-9)	X			<0.050						1	ug/L				
9P. 4,4'-DDD (72-54-8)	X			<0.050						1	ug/L				
10P. Dieldrin (60-57-1)	X			<0.050						1	ug/L				
11P. α-Enosulfan (115-29-7)	X			<0.04						1	ug/L				
12P. β-Endosulfan (115-29-7)	X			<0.04						1	ug/L				
13P. Endosulfan Sulfate (1031-07-8)	X			<0.050						1	ug/L				
14P. Endrin (72-20-8)	X			<0.050						1	ug/L				
15P. Endrin Aldehyde (7421-93-4)	X			<0.050						1	ug/L				
16P. Heptachlor (76-44-8)	X			<0.050						1	ug/L				

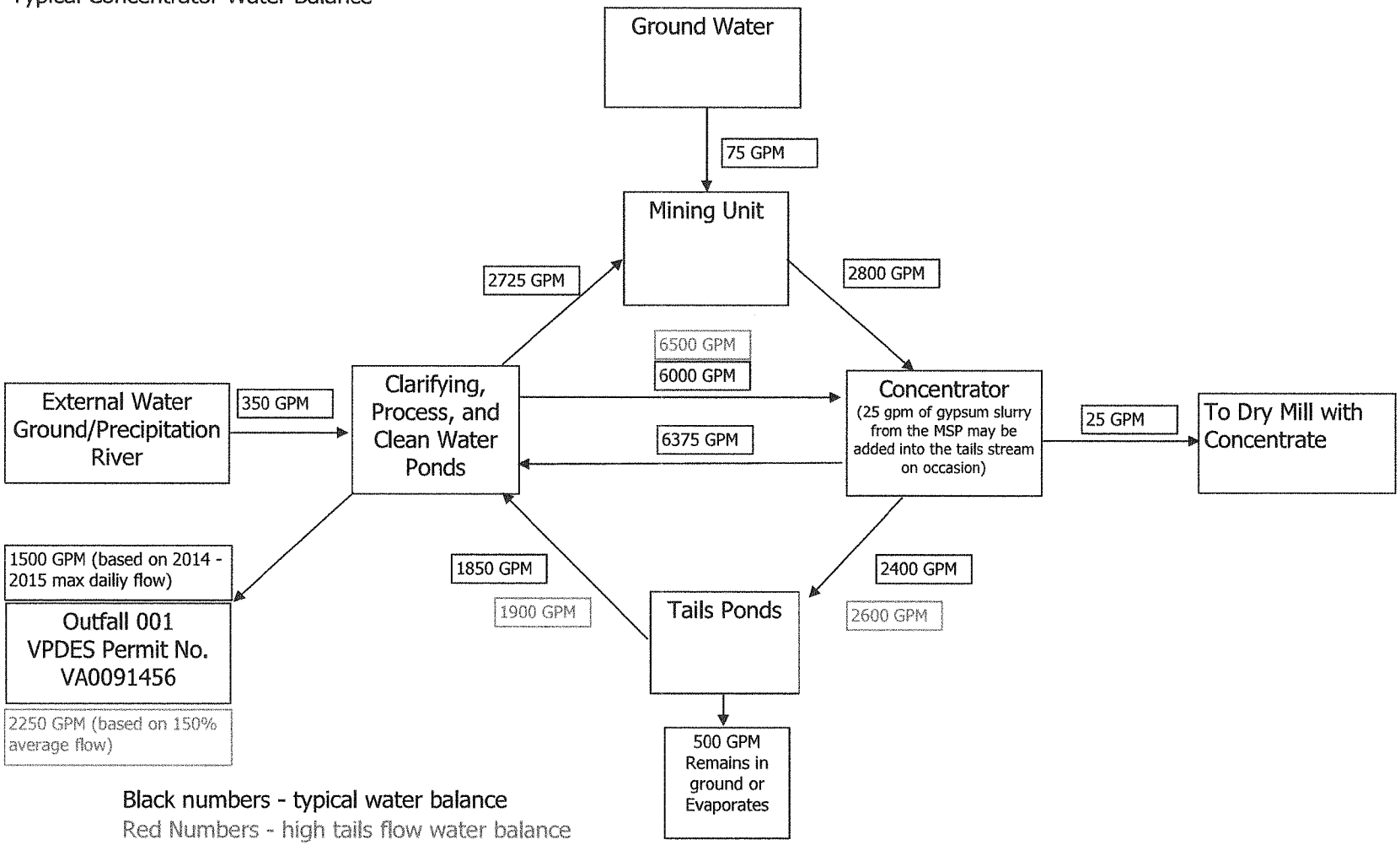
 CONTINUE ON PAGE V-9

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
VA0091456	001

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (*continued*)															
17P. Heptachlor Epoxide (1024-57-3)	X			<0.050						1	ug/L				
18P. PCB-1242 (53469-21-9)	X			<0.50						1	ug/L				
19P. PCB-1254 (11097-69-1)	X			<0.50						1	ug/L				
20P. PCB-1221 (11104-28-2)	X			<0.50						1	ug/L				
21P. PCB-1232 (11141-16-5)	X			<0.50						1	ug/L				
22P. PCB-1248 (12672-29-6)	X			<0.50						1	ug/L				
23P. PCB-1260 (11096-82-5)	X			<0.50						1	ug/L				
24P. PCB-1016 (12674-11-2)	X			<0.50						1	ug/L				
25P. Toxaphene (8001-35-2)	X			<0.50						1	ug/L				

Typical Concentrator Water Balance



Black numbers - typical water balance

Red Numbers - high tails flow water balance

VPDES Permit Reissuance Addendum
Public Notice Billing Information

VPDES Permit Application Addendum

1. **Entity to whom the permit is to be issued:** Iluka Resources Inc.

Who will be legally responsible for the wastewater treatment facilities and compliance with the permit? This may or may not be the facility or property owner.

2. **Is this facility located within city or town boundaries?** Yes ☐ No ☒

3. **Provide the tax map parcel number for the land where the discharge is located.** 101-1

4. **For the facility to be covered by this permit, how many acres will be disturbed during the next five years due to new construction activities?** 0

5. **What is the design average effluent flow of this facility?** 2.16 MGD

   For industrial facilities, provide the max. 30-day average production level, include units:

   97.2 million gallons per month

   In addition to the design flow or production level, should the permit be written with limits for any other discharge flow tiers or production levels? Yes ☐ No ☒

   If "Yes", please identify the other flow tiers (in MGD) or production levels:

Please consider the following questions for both the flow tiers and the production levels (if applicable): Do you plan to expand operations during the next five years? Is your facility's design flow considerably greater than your current flow?

6. **Nature of operations generating wastewater:**

   Settling of fine solids from the process water which is used in the mineral extraction and separation process.

   0 % of flow from domestic connections/sources

   Number of private residences to be served by the treatment works: 0

   100 % of flow from non-domestic connections/sources

7. **Mode of discharge:** ☐ Continuous ☒ Intermittent ☐ Seasonal

   Describe frequency and duration of intermittent or seasonal discharges:

   Discharge occurs during large storms and heavy rainfall events

8. **Identify the characteristics of the receiving stream at the point just above the facility's discharge point:**

   ____ Permanent stream, never dry

   ____ Intermittent stream, usually flowing, sometimes dry

   X Ephemeral stream, wet-weather flow, often dry

   ____ Effluent-dependent stream, usually or always dry without effluent flow

   ____ Lake or pond at or below the discharge point

   ____ Other: _____

9. **Approval Date(s):**

   O & M Manual Submitted 7/06 **Sludge/Solids Management Plan** N/A

   Have there been any changes in your operations or procedures since the above approval dates? Yes ☐ No ☒

PUBLIC NOTICE BILLING INFORMATION

I hereby authorize the Department of Environmental Quality to have the cost of publishing a public notice billed to the Agent/Department shown below. The public notice will be published once a week for two consecutive weeks in The Sussex Surry Dispatch in accordance with 9 VAC 25-31-290.C.2.

Agent/Department to be billed:	Environmental, Health, and Safety
Owner:	Iluka Resources Inc.
Agent/Department Address:	12472 St. John Church Road
	Stony Creek, VA 23882
Agent's Telephone No.:	434-348-4316
Printed Name:	Kevin Rideout
Authorizing Agent – Signature:	Kevin Rideout
Date:	10/23/15

VPDES Permit No. VA0091456
Iluka Concord Mine Concentrator

ATTACHMENT A –Water Quality Information

ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

Effective January 1, 2012, all analyses shall be in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

A listing of Virginia Environmental Laboratory Accreditation Program (VELAP) certified and/or accredited laboratories can be found at the following website:
http://www.dgs.state.va.us/DivisionofConsolidatedLaboratoryServices/Services/EnvironmentalLaboratoryCertification/tabid/1059/Default.aspx

Please be advised that additional water quality analyses may be necessary and/or required for permitting purposes.

CASRN	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS	SAMPLE TYPE[2]	SAMPLE FREQUENCY
			METALS			
7440-36-0	Antimony, dissolved	(3)	1.4	<1.0	G or C	1/5 YR
7440-38-2	Arsenic, dissolved	(3)	1.0	<1.0	G or C	1/5 YR
7440-43-9	Cadmium, dissolved	(3)	0.3	<0.10	G or C	1/5 YR
16065-83-1	Chromium III, dissolved [6]	(3)	3.6	<1.0	G or C	1/5 YR
18540-29-9	Chromium VI, dissolved [6]	(3)	1.6	0.041	G or C	1/5 YR
7440-50-8	Copper, dissolved	(3)	0.50	<1.0	G or C	1/5 YR
7439-92-1	Lead, dissolved	(3)	0.50	<1.0	G or C	1/5 YR
7439-97-6	Mercury, dissolved	(3)	1.0	<0.20	G or C	1/5 YR
7440-02-0	Nickel, dissolved	(3)	0.94	<1.0	G or C	1/5 YR
7782-49-2	Selenium, Total Recoverable	(3)	2.0	<1.0	G or C	1/5 YR (FW)
7440-22-4	Silver, dissolved	(3)	0.20	<0.10	G or C	1/5 YR
7440-28-0	Thallium, dissolved	(3)	(4)	<1.0	G or C	1/5 YR
7440-66-6	Zinc, dissolved	(3)	3.6	5.8	G or C	1/5 YR

CASRN	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS	SAMPLE TYPE[2]	SAMPLE FREQUENCY
			MISCELLANEOUS			
776-41-7	Ammonia as NH3-N	350.1	200	<100	C	1/5 YR
16887-00-6	Chloride	(3)	(4)	7400	C	1/5 YR (FW and PWS)
7782-50-5	Chlorine, Total Residual	(3)	100	70	G	1/5 YR
57-12-5	Cyanide, Free [8]	ASTM 4282-02	10.0	<10	G	1/5 YR
N/A	*E. coli* / *Enterococcus* (N/CML)	(3)	(4)	~~<1.0~~	G	1/5 YR
18496-25-8	Sulfide, dissolved [7]	SM 4500 S^2 B	100	<0.10	G or C	1/5 YR
60-10-5	Tributyltin	(5)	(4)		G or C	1/5 YR
471-34-1	Hardness (mg/L as $CaCO_3$)	(3)	(4)	18500	G or C	1/5 YR (FW & TZs)

AS PER LAB REPORT 92253726

Shane Tilka General Manager

Name of Principal Executive Officer or Authorized Agent & Title

10/26/15

Signature of Principal Executive Officer or Authorized Agent & Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

FOOTNOTES:

(1) Quantification level (QL) means the minimum levels, concentrations, or quantities of a target variable (e.g. target analyte) that can be reported with a specified degree of confidence in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

The quantification levels indicated for the metals are actually Specific Target Values developed for this permit. The Specific Target Value is the approximate value that may initiate a wasteload allocation analysis. Target values are not wasteload allocations or effluent limitations. The Specific Target Values are subject to change based on additional information such as hardness data, receiving stream flow, and design flows.

Units for the quantification level are micrograms/liter unless otherwise specified.

Quality control and quality assurance information (i.e. laboratory certificates of analysis) shall be submitted to document that the required quantification level has been attained.

(2) Sample Type

G = Grab = An individual sample collected in less than 15 minutes. Substances specified with "grab" sample type shall only be collected as grabs. The permittee may analyze multiple grabs and report the average results provided that the individual grab results are also reported. For grab metals samples, the individual samples shall be filtered and preserved immediately upon collection.

C = Composite = A 24-hour **(PW - Revise as required to require same composite duration as BOD_5)** composite unless otherwise specified. The composite shall be a combination of individual samples, taken proportional to flow, obtained at hourly or smaller time intervals. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period.

(3) A specific analytical method is not specified; however, an appropriate method to meet the QL shall be selected from (i) any approved method presented in 40 CFR Part 136 or (ii) any alternative EPA approved method, provided that all analyses are in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

(4) The QL is at the discretion of the permittee. If the test result is less than the method QL, a "<[QL]" shall be reported where the actual analytical test QL is substituted for [QL].

(5) Analytical Methods: Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, dated November 1996 (currently the only Virginia Environmental Laboratory Accreditation Program (VELAP) accredited method).

(6) Both Chromium III and Chromium VI may be measured by the total chromium analysis. The total chromium analytical test QL shall be less than or equal to the lesser of the Chromium III or Chromium VI method QL listed above. If the result of the total chromium analysis is less than the analytical test QL, both Chromium III and Chromium VI can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].

(7) Dissolved sulfide may be measured by the total sulfide analysis. The total sulfide analytical test QL shall be less than or equal to the dissolved sulfide method QL listed above. If the result of the total sulfide analysis is less than the analytical test QL, dissolved sulfide can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].

(8) Free cyanide may be measured by the total cyanide analysis. The total cyanide analytical test QL shall be less than or equal to the free cyanide method QL listed above. If the result of the total cyanide analysis is less than the analytical test QL, free cyanide can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].

Certificate of Analysis
Pace Project Numbers
92243396
92245142
92253102
92254133
92244754
92244759
ENCO Project Number
C510446

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

April 20, 2015

Kevin Rideout

RE: Project: Concord Attach A
Pace Project No.: 92244759

Dear Kevin Rideout:
Enclosed are the analytical results for sample(s) received by the laboratory on April 09, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Terri Page

Terri Page
terri.page@pacelabs.com
Project Manager

Enclosures

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: Concord Attach A
Pace Project No.: 92244759

Ormond Beach Certification IDs
8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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(704)875-9092

SAMPLE ANALYTE COUNT

Project: Concord Attach A
Pace Project No.: 92244759

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92244759001	Concord Attachment A	EPA 200.8	CRT	1	PASI-O
		EPA 218.6	TK1	1	PASI-O

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ANALYTICAL RESULTS

Project: Concord Attach A
Pace Project No.: 92244759

Sample: Concord Attachment A **Lab ID: 92244759001** Collected: 04/09/15 08:34 Received: 04/09/15 11:57 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Chromium	ND	ug/L	1.0	1	04/16/15 08:55	04/17/15 18:48	7440-47-3	
Hexavalent Chromium Dissolved	Analytical Method: EPA 218.6							
Chromium, Hexavalent,Dissolved	0.041	ug/L	0.025	1		04/13/15 15:14	18540-29-9	

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(704)875-9092

QUALITY CONTROL DATA

Project: Concord Attach A
Pace Project No.: 92244759

QC Batch: MPRP/23631 | Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 | Analysis Description: 200.8 MET
Associated Lab Samples: 92244759001

METHOD BLANK: 1184928 | Matrix: Water
Associated Lab Samples: 92244759001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium	ug/L	ND	1.0	04/17/15 18:42	

LABORATORY CONTROL SAMPLE: 1184929

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	50	54.5	109	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1184930 1184931

Parameter	Units	92244759001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chromium	ug/L	ND	50	50	53.5	54.0	106	107	70-130	1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1184932 1184933

Parameter	Units	35183455002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chromium	ug/L	1.3	50	50	1.3	1.4	0	0	70-130	4	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Concord Attach A
Pace Project No.: 92244759

QC Batch: WETA/45349
QC Batch Method: EPA 218.6
Analysis Method: EPA 218.6
Analysis Description: Chromium, Hexavalent Dissolved
Associated Lab Samples: 92244759001

METHOD BLANK: 1181737
Matrix: Water
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent,Dissolved	ug/L	ND	0.025	04/13/15 14:48	

LABORATORY CONTROL SAMPLE: 1181738

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent,Dissolved	ug/L	.075	0.079	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1181739 1181740

Parameter	Units	92244759001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chromium, Hexavalent,Dissolved	ug/L	0.041	.075	.075	0.12	0.11	103	93	90-110	6	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: Concord Attach A
Pace Project No.: 92244759

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Concord Attach A
Pace Project No.: 92244759

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92244759001	Concord Attachment A	EPA 200.8	MPRP/23631	EPA 200.8	ICPM/9614
92244759001	Concord Attachment A	EPA 218.6	WETA/45349		

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

1828767

Section A Required Client Information:

Company: Dunn Resources Inc
Address: 12422 St John Church Rd, Stony Creek VA 23882
Email To: kevin.ridout@iuen.com
Phone: 434-348-4315 Fax:
Requested Due Date/TAT: 10 Days

Section B Required Project Information:

Report To: Kevin ridout@iuen.com
Copy To:
Purchase Order No.: 45CC3633877
Project Name: Concord Attachment H
Project Number:

Section C Invoice Information:

Attention: Dwan Hall
Company Name: --
Address: —
Pace Quote Reference: —
Pace Project Manager: —
Pace Profile #: —

REGULATORY AGENCY

☑ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Concord VA

Requested Analysis Filtered (Y/N)

9224759

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chromium III Y/N	Chromium VI Y/N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Concord Attachment A	Lai	G			4-9-15	8:34	1				1							✓	✓		
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

*Please See Attachment for Parameters

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	James W Barlow	4-9-15	9:57	Preston B. Hamill	4-9-15	9:57	
	Preston B. Hamill	4-9-15	11:57	[illegible]	4-9-15	11:57	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: James W Barlow

SIGNATURE of SAMPLER: James W Barlow DATE Signed (MM/DD/YY): 4-9-15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

Effective January 1, 2012, all analyses shall be in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

A listing of Virginia Environmental Laboratory Accreditation Program (VELAP) certified and/or accredited laboratories can be found at the following website:
http://www.dgs.state.va.us/DivisionofConsolidatedLaboratoryServices/Services/EnvironmentalLaboratoryCertification/tabid/1059/Default.aspx

Please be advised that additional water quality analyses may be necessary and/or required for permitting purposes.

Remove from last submittal.

CASRN	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS	SAMPLE TYPE[2]	SAMPLE FREQUENCY
METALS						
7440-36-0	Antimony, dissolved	(3)	1.4		G or C	1/5 YR
7440-38-2	Arsenic, dissolved	(3)	1.0		G or C	1/5 YR
7440-43-9	Cadmium, dissolved	(3)	0.3		G or C	1/5 YR
16065-83-1	Chromium III, dissolved [6]	(3)	3.6		G or C	1/5 YR
18540-29-9	Chromium VI, dissolved [6]	(3)	1.6		G or C	1/5 YR
7440-50-8	Copper, dissolved	(3)	0.50		G or C	1/5 YR
7439-92-1	Lead, dissolved	(3)	0.50		G or C	1/5 YR
7439-97-6	Mercury, dissolved	(3)	1.0		G or C	1/5 YR
7440-02-0	Nickel, dissolved	(3)	0.94		G or C	1/5 YR
7782-49-2	Selenium, Total Recoverable	(3)	2.0		G or C	1/5 YR (FW)
7440-22-4	Silver, dissolved	(3)	0.20		G or C	1/5 YR
7440-28-0	Thallium, dissolved	(3)	(4)		G or C	1/5 YR
7440-66-6	Zinc, dissolved	(3)	3.6		G or C	1/5 YR
MISCELLANEOUS						
776-41-7	Ammonia as NH3-N	350.1	200		C	1/5 YR
16887-00-6	Chloride	(3)	(4)		C	1/5 YR (FW and PWS)
7782-50-5	Chlorine, Total Residual	(3)	100		G	1/5 YR
57-12-5	Cyanide, Free [6]	ASTM 4282-02	10.0		G	1/5 YR
N/A	*E. coli* / *Enterococcus* (N/CML)	(3)	(4)		G	1/5 YR
18496-25-8	Sulfide, dissolved [7]	SM 4500 S^2 B	100		G or C	1/5 YR

Pace Analytical	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: December 3, 2013 Page 2 of 2
	Document No.: F-RMD-CS-001-Rev.00	Issuing Authorities: Pace Asheville Quality Office

Sample Bottle Codes

Item#	BP4U	BP3U	BP2U	BP1U	BP3S	BP3N	BP3Z	BP3C	WGFU	AG1U	AG1H	AG2U	AG1S	AG3S	AG3A	DG9H	VG9T	VG9U	DG9S	VOAK(4vials per kit)	V/GK(3vials per kit)	SP5T	SP2T		
1		1		1	2																		1		
2		1		1	2																		1		

Client Sample ID(s)	Sample Discrepancy

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation Adjusted	Time Preservation Adjusted	Amount of Preservative added	Lot# of Preservative

Bottle Code Key

125 ml Plastic Unp: BP4U
250 ml Plastic Unp: BP3U
500 ml Plastic Unp: BP2U
1 Liter Plastic Unp: BP1U
250 ml Plastic H2SO4: BP3S
250 ml Plastic HNO3: BP3N
250 ml Plastic ZN Acetate: BP3Z
250 ml Plastic NaOH: BP3C
Wide mouthed glass jar unp: WGFU

1 Liter Amber Unp: AG1U
1 Liter Amber HCl: AG1H
500 ml Amber Unp: AG2U
1 Liter Amber H2SO4: AG1S
250 ml Amber H2SO4: AG3S
250 ml Amber NH4CL: AG3A
40 ml VOA HCl: DG9H
40 ml VOA Na2S2O3: VG9T
40 ml VOA Unp: VG9U

40 ml VOA H2SO4: DG9S
5035 Kit: VOAK
VPH / Gas Kit : V/GK
125 ml Sterile Plastic: SP5T
250 ml Sterile Plastic: SP2T

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

April 14, 2015

Kevin Rideout

RE: Project: ILUKA CONCORD PROCESS
Pace Project No.: 92245142

Dear Kevin Rideout:
Enclosed are the analytical results for sample(s) received by the laboratory on April 13, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Terri Page

Terri Page
terri.page@pacelabs.com
Project Manager

Enclosures

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: ILUKA CONCORD PROCESS
Pace Project No.: 92245142

Eden Certification IDs
205 East Meadow Road Suite A, Eden, NC 27288
North Carolina Drinking Water Certification #: 37738

North Carolina Wastewater Certification #: 633
Virginia/VELAP Certification #: 460025

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SAMPLE ANALYTE COUNT

Project: ILUKA CONCORD PROCESS
Pace Project No.: 92245142

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92245142001	CONCORD PROCESS	SM 9222D	CHM	1	PASI-E

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ANALYTICAL RESULTS

Project: ILUKA CONCORD PROCESS
Pace Project No.: 92245142

Sample: CONCORD PROCESS Lab ID: 92245142001 Collected: 04/13/15 09:59 Received: 04/13/15 12:23 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222D Fecal Coliform EDN	Analytical Method: SM 9222D							
Fecal Coliforms	1.0	CFU/100 mL	1.0	1		04/13/15 16:53		D6,u1

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QUALITY CONTROL DATA

Project: ILUKA CONCORD PROCESS
Pace Project No.: 92245142

QC Batch: EDEN/18088
QC Batch Method: SM 9222D
Analysis Method: SM 9222D
Analysis Description: 9222D MBIO Fecal Coliform - EDN
Associated Lab Samples: 92245142001

METHOD BLANK: 1433335
Matrix: Water
Associated Lab Samples: 92245142001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/100 mL	ND	1.0	04/13/15 16:53	

SAMPLE DUPLICATE: 1433336

Parameter	Units	92245142001 Result	Dup Result	RPD	Qualifiers
Fecal Coliforms	CFU/100 mL	1.0	ND		D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: ILUKA CONCORD PROCESS
Pace Project No.: 92245142

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-E	Pace Analytical Services - Eden

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
u1	Results based upon colony counts outside acceptable range.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ILUKA CONCORD PROCESS
Pace Project No.: 92245142

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92245142001	CONCORD PROCESS	SM 9222D	EDEN/18088		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

1828738

Section A Required Client Information:

Company: Iluka Resources Inc
Address: 12472 St. John Church Rd
Stony Creek VA. 23882
Email To: Kevin.rideout@iluka.com
Phone: 434-348-4316 Fax:
Requested Due Date/TAT: 10 Days

Section B Required Project Information:

Report To: Kevin.rideout@iluka.com
Copy To:
Purchase Order No.: 4500363877
Project Name:
Project Number:

Section C Invoice Information:

Attention: Dawn Hall
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Concord VA.

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ (Y/N)	Fecal Coliform (N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Concord Process	WT	G			4/13/15	09:55	2.6	1										✓		92245142
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	James W Barbour / Iluka	4-13-15	11:00	Preston B. Hamilt			
	Preston B. Hamilt	4-13-15	12:23	Rachel Burness	4-13	1223	12.5

WO#: 92245142

92245142

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: James W Barbour

SIGNATURE of SAMPLER: James W Barbour DATE Signed (MM/DD/YY): 04-13-15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Payment terms and agreeing to late charges of 1.5% per month on any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical® www.pacelabs.com	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: March 13, 2013 Page 1 of 2
	Document No.: F-EDN-CS-003-rev.09	Issuing Authorities: Pace Eden Quality Office

Client Name: Tuka

Where Received: ☐ Huntersville ☐ Asheville ☑ Eden ☐ Raleigh

Courier (circle): Fed Ex UPS USPS Client Commercial Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other_____

Thermometer Used: IR Gun ED007 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Temp Correction Factor: Add / Subtract -1 C

Corrected Cooler Temp.: 0.2 C Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/13/15 dp

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☑Yes	☐No	☐N/A	6. Fecal
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WD	☐Yes	☐No	☐N/A	12.
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		Initial when completed dp
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

SCURF Review: Date:

SRF Review: Date:

Place label here

OR

Handwrite project number (if no label available)

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

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

April 21, 2015

Kevin Rideout

RE: Project: Concord Process Pond
Pace Project No.: 92244754

Dear Kevin Rideout:
Enclosed are the analytical results for sample(s) received by the laboratory on April 09, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Terri Page

Terri Page
terri.page@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: Concord Process Pond
Pace Project No.: 92244754

Ormond Beach Certification IDs
8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

Eden Certification IDs
205 East Meadow Road Suite A, Eden, NC 27288
North Carolina Drinking Water Certification #: 37738
North Carolina Wastewater Certification #: 633
Virginia/VELAP Certification #: 460025

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SAMPLE ANALYTE COUNT

Project: Concord Process Pond
Pace Project No.: 92244754

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92244754001	Concord Process Pond	SM 2120E Color ADMI	JTF	4	PASI-E
		SM 2540D	JTF	1	PASI-E
		SM 5210B	DWJ	1	PASI-E
		EPA 200.7	TAP	10	PASI-O
		EPA 200.8	CRT	12	PASI-O
		EPA 245.1	CKJ	1	PASI-O
		EPA 624	GAW	24	PASI-C
		SM 4500-Cl G	MLS	1	PASI-A
		SM 5540C	GPW	2	PASI-O
		EPA 300.0	AES2	2	PASI-A
		EPA 300.1	ADC	2	PASI-O
		SM 5220D	MAB	1	PASI-A
		SM 5310B	AES2	1	PASI-A

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ANALYTICAL RESULTS

Project: Concord Process Pond
Pace Project No.: 92244754

Sample: Concord Process Pond Lab ID: 92244754001 Collected: 04/09/15 08:02 Received: 04/09/15 11:57 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2120E Color ADMI	Analytical Method: SM 2120E Color ADMI							
Color, ADMI	ND	units	25.0	1		04/10/15 11:45		
Adjusted Color, ADMI	ND	units	25.0	1		04/10/15 11:45		
pH	6.5	units	1.0	1		04/10/15 11:45		
Adjusted pH, ADMI	7.6	units	1.0	1		04/10/15 11:45		
2540D TSS, Low-Level, Eden	Analytical Method: SM 2540D							
Total Suspended Solids	31.6	mg/L	1.4	1		04/10/15 08:52		
5210B BOD, 5 day EDN	Analytical Method: SM 5210B							
BOD, 5 day	ND	mg/L	2.0	1	04/09/15 17:57	04/14/15 12:15		
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Aluminum	3640	ug/L	100	1	04/15/15 15:36	04/18/15 19:07	7429-90-5	M1
Barium	24.9	ug/L	10.0	1	04/15/15 15:36	04/18/15 19:07	7440-39-3	
Boron	ND	ug/L	50.0	1	04/15/15 15:36	04/18/15 19:07	7440-42-8	
Cobalt	ND	ug/L	10.0	1	04/15/15 15:36	04/18/15 19:07	7440-48-4	
Iron	3640	ug/L	40.0	1	04/15/15 15:36	04/18/15 19:07	7439-89-6	
Magnesium	1310	ug/L	500	1	04/15/15 15:36	04/18/15 19:07	7439-95-4	
Manganese	21.9	ug/L	5.0	1	04/15/15 15:36	04/18/15 19:07	7439-96-5	
Molybdenum	ND	ug/L	10.0	1	04/15/15 15:36	04/18/15 19:07	7439-98-7	
Tin	ND	ug/L	50.0	1	04/15/15 15:36	04/18/15 19:07	7440-31-5	
Titanium	45.2	ug/L	10.0	1	04/15/15 15:36	04/18/15 19:07	7440-32-6	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Antimony	ND	ug/L	1.0	1	04/15/15 15:36	04/16/15 08:13	7440-36-0	
Arsenic	1.0	ug/L	1.0	1	04/15/15 15:36	04/16/15 08:13	7440-38-2	
Beryllium	ND	ug/L	0.10	1	04/15/15 15:36	04/16/15 08:13	7440-41-7	CU
Cadmium	ND	ug/L	0.10	1	04/15/15 15:36	04/16/15 08:13	7440-43-9	
Chromium	4.1	ug/L	1.0	1	04/15/15 15:36	04/16/15 08:13	7440-47-3	
Copper	3.2	ug/L	1.0	1	04/15/15 15:36	04/16/15 08:13	7440-50-8	
Lead	2.0	ug/L	1.0	1	04/15/15 15:36	04/16/15 08:13	7439-92-1	
Nickel	1.1	ug/L	1.0	1	04/15/15 15:36	04/16/15 08:13	7440-02-0	
Selenium	ND	ug/L	1.0	1	04/15/15 15:36	04/16/15 08:13	7782-49-2	
Silver	ND	ug/L	0.10	1	04/15/15 15:36	04/16/15 08:13	7440-22-4	
Thallium	ND	ug/L	1.0	1	04/15/15 15:36	04/16/15 08:13	7440-28-0	
Zinc	11.0	ug/L	5.0	1	04/15/15 15:36	04/16/15 08:13	7440-66-6	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
Mercury	ND	mg/L	0.00020	1	04/14/15 21:48	04/15/15 18:53	7439-97-6	
624 Volatile Organics	Analytical Method: EPA 624							
Acrolein	ND	ug/L	5.0	1		04/15/15 23:56	107-02-8	
Acrylonitrile	ND	ug/L	50.0	1		04/15/15 23:56	107-13-1	
Benzene	ND	ug/L	2.0	1		04/15/15 23:56	71-43-2	
Bromoform	ND	ug/L	2.0	1		04/15/15 23:56	75-25-2	
Carbon tetrachloride	ND	ug/L	2.0	1		04/15/15 23:56	56-23-5	

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ANALYTICAL RESULTS

Project: Concord Process Pond
Pace Project No.: 92244754

Sample: Concord Process Pond **Lab ID: 92244754001** Collected: 04/09/15 08:02 Received: 04/09/15 11:57 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics	Analytical Method: EPA 624							
Chlorobenzene	ND	ug/L	2.0	1		04/15/15 23:56	108-90-7	
Chloroethane	ND	ug/L	2.0	1		04/15/15 23:56	75-00-3	
2-Chloroethylvinyl ether	ND	ug/L	5.0	1		04/15/15 23:56	110-75-8	
Chloroform	ND	ug/L	2.0	1		04/15/15 23:56	67-66-3	
Chloromethane	ND	ug/L	2.0	1		04/15/15 23:56	74-87-3	
Dichlorodifluoromethane	ND	ug/L	2.0	1		04/15/15 23:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	2.0	1		04/15/15 23:56	75-34-3	
1,3-Dichloropropane	ND	ug/L	2.0	1		04/15/15 23:56	142-28-9	
Ethylbenzene	ND	ug/L	2.0	1		04/15/15 23:56	100-41-4	
Methylene Chloride	ND	ug/L	2.0	1		04/15/15 23:56	75-09-2	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	1		04/15/15 23:56	630-20-6	
Toluene	ND	ug/L	2.0	1		04/15/15 23:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	2.0	1		04/15/15 23:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	1		04/15/15 23:56	79-00-5	
Trichlorofluoromethane	ND	ug/L	2.0	1		04/15/15 23:56	75-69-4	
Vinyl chloride	ND	ug/L	2.0	1		04/15/15 23:56	75-01-4	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		04/15/15 23:56	460-00-4	
Toluene-d8 (S)	102	%	70-130	1		04/15/15 23:56	2037-26-5	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		04/15/15 23:56	17060-07-0	
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G							
Chlorine, Total Residual	ND	mg/L	0.024	1		04/12/15 11:40	7782-50-5	
5540C MBAS Surfactants	Analytical Method: SM 5540C							
LAS Molecular Weight, g/mol	640			2		04/10/15 15:07		
MBAS, Calculated as LAS	ND	mg/L	0.40	2		04/10/15 15:07		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.50	1		04/16/15 23:01	16984-48-8	
Sulfate	8.6	mg/L	2.0	1		04/16/15 09:50	14808-79-8	
300.1 Oxihalide IC Anions 28d	Analytical Method: EPA 300.1							
Bromide	25.5	ug/L	25.0	5		04/16/15 14:27	24959-67-9	
Surrogates								
Dichloroacetate (S)	93	%	90-115	5		04/16/15 14:27	79-43-6	
5220D COD	Analytical Method: SM 5220D							
Chemical Oxygen Demand	ND	mg/L	25.0	1		04/14/15 14:15		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	1.9	mg/L	1.0	1		04/15/15 17:41	7440-44-0	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: EDEN/18076
QC Batch Method: SM 2120E Color ADMI
Analysis Method: SM 2120E Color ADMI
Analysis Description: 2120E Color ADMI
Associated Lab Samples: 92244754001

METHOD BLANK: 1431699
Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Color, ADMI	units	ND	25.0	04/10/15 11:22	

LABORATORY CONTROL SAMPLE: 1431700

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Color, ADMI	units	125	126	101	90-110	

SAMPLE DUPLICATE: 1431701

Parameter	Units	92244754001 Result	Dup Result	RPD	Qualifiers
Color, ADMI	units	ND	ND		

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: EDEN/18072 | Analysis Method: SM 2540D
QC Batch Method: SM 2540D | Analysis Description: 2540D TSS, Low Level, Eden
Associated Lab Samples: 92244754001

METHOD BLANK: 1431432 | Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	04/10/15 08:48	

LABORATORY CONTROL SAMPLE: 1431433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	252	101	90-110	

SAMPLE DUPLICATE: 1431434

Parameter	Units	92244719001 Result	Dup Result	RPD	Qualifiers
Total Suspended Solids	mg/L	4840	4800	1	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: EDEN/18066 — Analysis Method: SM 5210B
QC Batch Method: SM 5210B — Analysis Description: 5210B BOD, 5 day EDN
Associated Lab Samples: 92244754001

METHOD BLANK: 1430963 — Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	04/14/15 12:15	

LABORATORY CONTROL SAMPLE: 1430964

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	181	91	84.5-115.4	

SAMPLE DUPLICATE: 1430965

Parameter	Units	92244505003 Result	Dup Result	RPD	Qualifiers
BOD, 5 day	mg/L	<2.0	ND		

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: MERP/5588
QC Batch Method: EPA 245.1
Analysis Method: EPA 245.1
Analysis Description: 245.1 Mercury
Associated Lab Samples: 92244754001

METHOD BLANK: 1183420
Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	04/15/15 18:02	

LABORATORY CONTROL SAMPLE: 1183421

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.002	0.0022	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1183422 1183423

Parameter	Units	35181779001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/L	<0.10 ug/L	.002	.002	0.0019	0.0020	96	100	70-130	4	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1183430 1183431

Parameter	Units	35183280003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/L	0.10U ug/L	.002	.002	0.0021	0.0021	107	107	70-130	0	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: MPRP/23607 | Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 | Analysis Description: 200.7 MET
Associated Lab Samples: 92244754001

METHOD BLANK: 1184133 | Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	100	04/18/15 18:59	
Barium	ug/L	ND	10.0	04/18/15 18:59	
Boron	ug/L	ND	50.0	04/18/15 18:59	
Cobalt	ug/L	ND	10.0	04/18/15 18:59	
Iron	ug/L	ND	40.0	04/18/15 18:59	
Magnesium	ug/L	ND	500	04/18/15 18:59	
Manganese	ug/L	ND	5.0	04/18/15 18:59	
Molybdenum	ug/L	ND	10.0	04/18/15 18:59	
Tin	ug/L	ND	50.0	04/18/15 18:59	
Titanium	ug/L	ND	10.0	04/18/15 18:59	

LABORATORY CONTROL SAMPLE: 1184134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	2500	2570	103	85-115	
Barium	ug/L	250	257	103	85-115	
Boron	ug/L	2500	2510	100	85-115	
Cobalt	ug/L	250	253	101	85-115	
Iron	ug/L	2500	2520	101	85-115	
Magnesium	ug/L	12500	12600	101	85-115	
Manganese	ug/L	250	252	101	85-115	
Molybdenum	ug/L	250	240	96	85-115	
Tin	ug/L	1250	1240	99	85-115	
Titanium	ug/L	250	245	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1184137 1184138

Parameter	Units	35183205002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Aluminum	ug/L	50.0U	2500	2500	2560	2560	101	101	70-130	0	
Barium	ug/L	9.2J	250	250	269	274	104	106	70-130	2	
Boron	ug/L	60.7	2500	2500	2660	2600	104	102	70-130	2	CH
Cobalt	ug/L	5.0U	250	250	266	259	106	104	70-130	3	
Iron	ug/L	144	2500	2500	2570	2500	97	94	70-130	3	
Magnesium	ug/L	2850	12500	12500	15200	15200	99	99	70-130	0	
Manganese	ug/L	6.4	250	250	265	258	104	100	70-130	3	
Molybdenum	ug/L	5.0U	250	250	260	254	102	100	70-130	2	
Tin	ug/L	25.0U	1250	1250	1310	1290	105	103	70-130	2	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1184137 1184138

Parameter	Units	35183205002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Titanium	ug/L	5.0U	250	250	254	252	101	100	70-130	1	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: MPRP/23608
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Associated Lab Samples: 92244754001

METHOD BLANK: 1184139
Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	04/16/15 08:01	
Arsenic	ug/L	ND	1.0	04/16/15 08:01	
Beryllium	ug/L	ND	0.10	04/16/15 08:01	
Cadmium	ug/L	ND	0.10	04/16/15 08:01	
Chromium	ug/L	ND	1.0	04/16/15 08:01	
Copper	ug/L	ND	1.0	04/16/15 08:01	
Lead	ug/L	ND	1.0	04/16/15 08:01	
Nickel	ug/L	ND	1.0	04/16/15 08:01	
Selenium	ug/L	ND	1.0	04/16/15 08:01	
Silver	ug/L	ND	0.10	04/16/15 08:01	
Thallium	ug/L	ND	1.0	04/16/15 08:01	
Zinc	ug/L	ND	5.0	04/16/15 08:01	

LABORATORY CONTROL SAMPLE: 1184140

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	50	49.2	98	85-115	
Arsenic	ug/L	50	51.2	102	85-115	
Beryllium	ug/L	5	5.5	111	85-115	
Cadmium	ug/L	5	5.3	105	85-115	
Chromium	ug/L	50	51.6	103	85-115	
Copper	ug/L	50	53.6	107	85-115	
Lead	ug/L	50	51.3	103	85-115	
Nickel	ug/L	50	54.0	108	85-115	
Selenium	ug/L	50	52.7	105	85-115	
Silver	ug/L	5	5.3	107	85-115	
Thallium	ug/L	50	51.2	102	85-115	
Zinc	ug/L	250	272	109	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1184141 1184142

Parameter	Units	35183091007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Antimony	ug/L	0.50U	50	50	47.5	48.5	94	96	70-130	2	
Arsenic	ug/L	1.2	50	50	51.5	52.7	100	103	70-130	2	
Beryllium	ug/L	0.050U	5	5	5.1	5.2	102	104	70-130	2	CU
Cadmium	ug/L	0.050U	5	5	4.9	4.8	98	95	70-130	4	
Chromium	ug/L	0.50U	50	50	50.7	52.9	100	105	70-130	4	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1184141 1184142

Parameter	Units	35183091007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Copper	ug/L	1.3	50	50	50.8	53.4	99	104	70-130	5	
Lead	ug/L	0.50U	50	50	52.3	54.0	104	107	70-130	3	
Nickel	ug/L	0.72J	50	50	52.0	53.6	103	106	70-130	3	
Selenium	ug/L	0.50U	50	50	48.8	50.4	98	101	70-130	3	
Silver	ug/L	0.050U	5	5	4.8	4.8	96	97	70-130	1	
Thallium	ug/L	0.50U	50	50	52.3	54.2	105	108	70-130	3	
Zinc	ug/L	33.5	250	250	275	283	96	100	70-130	3	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1184143 1184144

Parameter	Units	35183205003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Antimony	ug/L	0.50U	50	50	49.2	48.8	98	97	70-130	1	
Arsenic	ug/L	0.75J	50	50	51.2	50.3	101	99	70-130	2	
Beryllium	ug/L	0.050U	5	5	5.8	5.7	115	114	70-130	1	
Cadmium	ug/L	0.075J	5	5	5.1	4.7	100	93	70-130	7	
Chromium	ug/L	0.50U	50	50	51.8	51.0	103	101	70-130	1	
Copper	ug/L	0.50U	50	50	50.7	50.2	101	100	70-130	1	
Lead	ug/L	0.51J	50	50	52.2	52.1	103	103	70-130	0	
Nickel	ug/L	0.62U	50	50	51.2	51.1	102	101	70-130	0	
Selenium	ug/L	0.50U	50	50	51.0	50.1	102	100	70-130	2	
Silver	ug/L	0.050U	5	5	5.0	5.0	100	100	70-130	0	
Thallium	ug/L	0.50U	50	50	51.5	51.7	103	103	70-130	0	
Zinc	ug/L	3.2J	250	250	257	253	102	100	70-130	2	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: MSV/31212 | Analysis Method: EPA 624
QC Batch Method: EPA 624 | Analysis Description: 624 MSV
Associated Lab Samples: 92244754001

METHOD BLANK: 1435419 | Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	2.0	04/15/15 13:53	
1,1,1-Trichloroethane	ug/L	ND	2.0	04/15/15 13:53	
1,1,2-Trichloroethane	ug/L	ND	2.0	04/15/15 13:53	
1,1-Dichloroethane	ug/L	ND	2.0	04/15/15 13:53	
1,3-Dichloropropane	ug/L	ND	2.0	04/15/15 13:53	
2-Chloroethylvinyl ether	ug/L	ND	5.0	04/15/15 13:53	
Acrolein	ug/L	ND	5.0	04/15/15 13:53	
Acrylonitrile	ug/L	ND	50.0	04/15/15 13:53	
Benzene	ug/L	ND	2.0	04/15/15 13:53	
Bromoform	ug/L	ND	2.0	04/15/15 13:53	
Carbon tetrachloride	ug/L	ND	2.0	04/15/15 13:53	
Chlorobenzene	ug/L	ND	2.0	04/15/15 13:53	
Chloroethane	ug/L	ND	2.0	04/15/15 13:53	
Chloroform	ug/L	ND	2.0	04/15/15 13:53	
Chloromethane	ug/L	ND	2.0	04/15/15 13:53	
Dichlorodifluoromethane	ug/L	ND	2.0	04/15/15 13:53	
Ethylbenzene	ug/L	ND	2.0	04/15/15 13:53	
Methylene Chloride	ug/L	ND	2.0	04/15/15 13:53	
Toluene	ug/L	ND	2.0	04/15/15 13:53	
Trichlorofluoromethane	ug/L	ND	2.0	04/15/15 13:53	
Vinyl chloride	ug/L	ND	2.0	04/15/15 13:53	
1,2-Dichloroethane-d4 (S)	%	102	70-130	04/15/15 13:53	
4-Bromofluorobenzene (S)	%	103	70-130	04/15/15 13:53	
Toluene-d8 (S)	%	98	70-130	04/15/15 13:53	

LABORATORY CONTROL SAMPLE: 1435420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	51.3	103	70-130	
1,1,1-Trichloroethane	ug/L	50	50.6	101	52-162	
1,1,2-Trichloroethane	ug/L	50	53.0	106	52-150	
1,1-Dichloroethane	ug/L	50	51.3	103	59-155	
1,3-Dichloropropane	ug/L	50	53.0	106	70-130	
2-Chloroethylvinyl ether	ug/L	100	109	109	1-305	
Acrolein	ug/L	250	290	116	15-152	
Acrylonitrile	ug/L	250	245	98	75-132	
Benzene	ug/L	50	52.0	104	37-151	
Bromoform	ug/L	50	49.1	98	45-169	
Carbon tetrachloride	ug/L	50	52.0	104	70-140	
Chlorobenzene	ug/L	50	51.5	103	37-160	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

LABORATORY CONTROL SAMPLE: 1435420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroethane	ug/L	50	41.4	83	14-230	
Chloroform	ug/L	50	46.3	93	51-138	
Chloromethane	ug/L	50	43.6	87	1-273	
Dichlorodifluoromethane	ug/L	50	50.5	101	70-130	
Ethylbenzene	ug/L	50	49.8	100	37-162	
Methylene Chloride	ug/L	50	59.1	118	1-221	
Toluene	ug/L	50	50.8	102	47-150	
Trichlorofluoromethane	ug/L	50	53.6	107	17-181	
Vinyl chloride	ug/L	50	51.1	102	1-251	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			97	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1435434 1435435

Parameter	Units	92244984001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	21.1	23.0	106	115	70-130	8	
1,1,1-Trichloroethane	ug/L	ND	20	20	24.3	26.1	121	130	46-171	7	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.7	21.7	103	108	64-152	5	
1,1-Dichloroethane	ug/L	ND	20	20	26.7	27.9	133	140	43-172	5	
1,3-Dichloropropane	ug/L	ND	20	20	22.6	23.9	113	120	70-130	6	
2-Chloroethylvinyl ether	ug/L	ND	40	40	45.0	46.3	112	116	70-130	3	
Acrolein	ug/L	ND	100	100	72.8	80.3	73	80	70-130	10	
Acrylonitrile	ug/L	ND	100	100	128	134	128	134	70-130	5	M1
Benzene	ug/L	ND	20	20	24.1	24.5	121	122	54-163	1	
Bromoform	ug/L	ND	20	20	18.7	19.6	94	98	53-151	4	
Carbon tetrachloride	ug/L	ND	20	20	24.3	24.3	122	121	41-175	0	
Chlorobenzene	ug/L	ND	20	20	21.8	22.6	109	113	67-152	4	
Chloroethane	ug/L	ND	20	20	31.4	31.6	157	158	23-200	1	
Chloroform	ug/L	ND	20	20	22.9	24.3	114	122	51-166	6	
Chloromethane	ug/L	ND	20	20	19.9	20.6	99	103	40-175	4	
Dichlorodifluoromethane	ug/L	ND	20	20	26.8	27.6	134	138	70-130	3	M1
Ethylbenzene	ug/L	ND	20	20	22.8	23.8	114	119	57-152	4	
Methylene Chloride	ug/L	ND	20	20	23.5	25.4	118	127	40-167	8	
Toluene	ug/L	ND	20	20	22.9	22.9	114	114	47-162	0	
Trichlorofluoromethane	ug/L	ND	20	20	29.8	31.4	149	157	42-199	5	
Vinyl chloride	ug/L	ND	20	20	28.2	29.2	141	146	46-176	3	
1,2-Dichloroethane-d4 (S)	%						101	105	70-130		
4-Bromofluorobenzene (S)	%						94	96	70-130		
Toluene-d8 (S)	%						100	101	70-130		

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: WET/36785
QC Batch Method: SM 4500-Cl G
Associated Lab Samples: 92244754001

Analysis Method: SM 4500-Cl G
Analysis Description: 4500CL G Chlorine, Total Residual

METHOD BLANK: 1432741
Associated Lab Samples: 92244754001

Matrix: Water

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.024	04/12/15 11:40	

SAMPLE DUPLICATE: 1432742

Parameter	Units	92244754001 Result	Dup Result	RPD	Qualifiers
Chlorine, Total Residual	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: WET/30184 | Analysis Method: SM 5540C
QC Batch Method: SM 5540C | Analysis Description: 5540C MBAS Surfactants
Associated Lab Samples: 92244754001

METHOD BLANK: 1179741 | Matrix: Water
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
LAS Molecular Weight, g/mol		320		04/10/15 09:53	
MBAS, Calculated as LAS	mg/L	ND	0.20	04/10/15 09:53	

LABORATORY CONTROL SAMPLE: 1179742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
LAS Molecular Weight, g/mol			320			
MBAS, Calculated as LAS	mg/L	.3	0.32	107	90-110	

MATRIX SPIKE SAMPLE: 1179744

Parameter	Units	35183050001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
LAS Molecular Weight, g/mol		320		320			
MBAS, Calculated as LAS	mg/L	0.059U	.3	0.23	60	90-110	M1

SAMPLE DUPLICATE: 1179743

Parameter	Units	35183050001 Result	Dup Result	RPD	Qualifiers
LAS Molecular Weight, g/mol		320	320	0	
MBAS, Calculated as LAS	mg/L	0.059U	ND		

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: WETA/22559 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92244754001

METHOD BLANK: 1434133 | Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.50	04/16/15 21:56	
Sulfate	mg/L	ND	2.0	04/16/15 09:23	

LABORATORY CONTROL SAMPLE: 1434134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	20	19.2	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1434135 1434136

Parameter	Units	92244754001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	101	99	90-110	1	
Sulfate	mg/L	8.6	20	20	28.1	28.1	98	98	90-110	0	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: WETA/45466
QC Batch Method: EPA 300.1
Analysis Method: EPA 300.1
Analysis Description: 300.1 Oxihalides IC Anions
Associated Lab Samples: 92244754001

METHOD BLANK: 1185233
Matrix: Water
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	ug/L	ND	5.0	04/16/15 13:00	
Dichloroacetate (S)	%	97	90-115	04/16/15 13:00	

LABORATORY CONTROL SAMPLE: 1185234

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	ug/L	40	39.1	98	85-115	
Dichloroacetate (S)	%			102	90-115	

MATRIX SPIKE SAMPLE: 1185236

Parameter	Units	35183558001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	ug/L	2510	800	3190	85	75-125	E
Dichloroacetate (S)	%				96	90-115	

SAMPLE DUPLICATE: 1185235

Parameter	Units	35183558001 Result	Dup Result	RPD	Qualifiers
Bromide	ug/L	2510	2500	0	
Dichloroacetate (S)	%	94	97	4	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: WETA/22548 Analysis Method: SM 5220D
QC Batch Method: SM 5220D Analysis Description: 5220D COD
Associated Lab Samples: 92244754001

METHOD BLANK: 1433582 Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	04/14/15 14:15	

LABORATORY CONTROL SAMPLE: 1433583

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	768	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1433584 1433585

Parameter	Units	92244521001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chemical Oxygen Demand	mg/L	4790	7500	7500	12200	12200	99	99	90-110	0	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1433586 1433587

Parameter	Units	92244964001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chemical Oxygen Demand	mg/L	2070	7500	7500	10000	10000	106	106	90-110	0	

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QUALITY CONTROL DATA

Project: Concord Process Pond
Pace Project No.: 92244754

QC Batch: WETA/22574 | Analysis Method: SM 5310B
QC Batch Method: SM 5310B | Analysis Description: 5310B TOC
Associated Lab Samples: 92244754001

METHOD BLANK: 1435046 | Matrix: Water
Associated Lab Samples: 92244754001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	04/15/15 17:18	

LABORATORY CONTROL SAMPLE: 1435047

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.6	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1435048 1435049

Parameter	Units	92244754001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Total Organic Carbon	mg/L	1.9	25	25	28.0	27.5	105	103	90-110	2	

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QUALIFIERS

Project: Concord Process Pond
Pace Project No.: 92244754

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-E	Pace Analytical Services - Eden
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
CU	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Concord Process Pond
Pace Project No.: 92244754

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92244754001	Concord Process Pond	SM 2120E Color ADMI	EDEN/18076		
92244754001	Concord Process Pond	SM 2540D	EDEN/18072		
92244754001	Concord Process Pond	SM 5210B	EDEN/18066	SM 5210B	EDEN/18070
92244754001	Concord Process Pond	EPA 200.7	MPRP/23607	EPA 200.7	ICP/14433
92244754001	Concord Process Pond	EPA 200.8	MPRP/23608	EPA 200.8	ICPM/9603
92244754001	Concord Process Pond	EPA 245.1	MERP/5588	EPA 245.1	MERC/5576
92244754001	Concord Process Pond	EPA 624	MSV/31212		
92244754001	Concord Process Pond	SM 4500-Cl G	WET/36785		
92244754001	Concord Process Pond	SM 5540C	WET/30184		
92244754001	Concord Process Pond	EPA 300.0	WETA/22559		
92244754001	Concord Process Pond	EPA 300.1	WETA/45466		
92244754001	Concord Process Pond	SM 5220D	WETA/22548		
92244754001	Concord Process Pond	SM 5310B	WETA/22574		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

1807407

Section A Required Client Information:
Company: Hilton Resources Inc
Address: 12470-01 Hilton Circle Road
Stony Creek, VA 23882
Email To: Kevin.richard@hilton.com
Phone: 434-942-4510 Fax:
Requested Due Date/TAT: 10

Section B Required Project Information:
Report To: Kevin.richard@hilton.com
Copy To:
Purchase Order No.: 4500036077
Project Name: Concord
Project Number:

Section C Invoice Information:
Attention: Dana Hall
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY
☑ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____
Site Location STATE: Concord VA

922 44754

Please see attachment for individual parameters.

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	BOD	TSS	TOC	624	COD	Color	Total Metals Hg	Fluoride	Chlorine	Sulfate	Bromide	MBAS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Concord Process Pond	WW	C	4-9-15	08:05	4-9-15	08:05	4°	15	●									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Jason W Barlow	4-9-15	9:57	Preston B. Hamlett	4-9-15	9:57				
	Preston B Hamlett	4-9-15	11:57	[signature]	4-9-15	11:57	0.7			

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: James W. Barlow
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 4-9-15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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(704)875-9092

April 29, 2015

Kevin Rideout

RE: Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

Dear Kevin Rideout:
Enclosed are the analytical results for sample(s) received by the laboratory on March 31, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brittany L Gibson

Brittany Gibson for
Terri Page
terri.page@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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SAMPLE ANALYTE COUNT

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92243396001	CONCORD PROCESS WATER	EPA 1664B	CLW	1	PASI-C
		EPA 608	RES	27	PASI-C
		EPA 8082	SWB	8	PASI-C
		EPA 625	BPJ	58	PASI-C
		EPA 900.0	FCC	2	PASI-PA
		EPA 903.1	JC2	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 4500-S2D	MAB	1	PASI-A
		TKN+NO3+NO2 Calculation	EWS	1	PASI-A
		EPA 350.1	AES2	1	PASI-A
		EPA 351.2	SER	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		EPA 365.1	SER	1	PASI-A
		EPA 420.4	DMN	1	PASI-A
		SM 4500-CN-E	JDA	1	PASI-A

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ANALYTICAL RESULTS

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

Sample: CONCORD PROCESS WATER Lab ID: 92243396001 Collected: 03/31/15 08:30 Received: 03/31/15 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664B							
Oil and Grease	ND	mg/L	5.0	1		04/06/15 09:24		
608 GCS Pesticides and PCBs	Analytical Method: EPA 608 Preparation Method: EPA 3510							
Aldrin	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	309-00-2	
alpha-BHC	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	319-84-6	
beta-BHC	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	319-85-7	
delta-BHC	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	57-74-9	
4,4'-DDD	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	72-54-8	
4,4'-DDE	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	72-55-9	
4,4'-DDT	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	50-29-3	
Dieldrin	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	60-57-1	
Endosulfan I	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	959-98-8	
Endosulfan II	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	1031-07-8	
Endrin	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	7421-93-4	
Heptachlor	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	1	04/03/15 16:00	04/06/15 23:22	1024-57-3	
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	11096-82-5	
Toxaphene	ND	ug/L	0.50	1	04/03/15 16:00	04/06/15 23:22	8001-35-2	
Surrogates								
Tetrachloro-m-xylene (S)	56	%	20-110	1	04/03/15 16:00	04/06/15 23:22	877-09-8	
Decachlorobiphenyl (S)	85	%	20-138	1	04/03/15 16:00	04/06/15 23:22	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510							
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	1	04/07/15 08:45	04/08/15 04:39	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	1	04/07/15 08:45	04/08/15 04:39	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	1	04/07/15 08:45	04/08/15 04:39	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	1	04/07/15 08:45	04/08/15 04:39	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	1	04/07/15 08:45	04/08/15 04:39	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	1	04/07/15 08:45	04/08/15 04:39	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	1	04/07/15 08:45	04/08/15 04:39	11096-82-5	
Surrogates								
Decachlorobiphenyl (S)	101	%	10-132	1	04/07/15 08:45	04/08/15 04:39	2051-24-3	
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
Acenaphthene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	83-32-9	
Acenaphthylene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	208-96-8	

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ANALYTICAL RESULTS

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

Sample: CONCORD PROCESS WATER **Lab ID: 92243396001** Collected: 03/31/15 08:30 Received: 03/31/15 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
Anthracene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	101-55-3	
Butylbenzylphthalate	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1	04/04/15 09:15	04/07/15 02:19	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	108-60-1	
2-Chloronaphthalene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	91-58-7	
2-Chlorophenol	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	7005-72-3	
Chrysene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	25.0	1	04/04/15 09:15	04/07/15 02:19	91-94-1	
2,4-Dichlorophenol	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	120-83-2	
Diethylphthalate	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	84-66-2	
2,4-Dimethylphenol	ND	ug/L	10.0	1	04/04/15 09:15	04/07/15 02:19	105-67-9	
Dimethylphthalate	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	131-11-3	
Di-n-butylphthalate	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	20.0	1	04/04/15 09:15	04/07/15 02:19	534-52-1	
2,4-Dinitrophenol	ND	ug/L	50.0	1	04/04/15 09:15	04/07/15 02:19	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	606-20-2	
Di-n-octylphthalate	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	117-81-7	
Fluoranthene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	206-44-0	
Fluorene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	87-68-3	
Hexachlorobenzene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1	04/04/15 09:15	04/07/15 02:19	77-47-4	L2
Hexachloroethane	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	193-39-5	
Isophorone	ND	ug/L	10.0	1	04/04/15 09:15	04/07/15 02:19	78-59-1	
Naphthalene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	91-20-3	
Nitrobenzene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	98-95-3	
2-Nitrophenol	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	1	04/04/15 09:15	04/07/15 02:19	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1	04/04/15 09:15	04/07/15 02:19	86-30-6	
Pentachlorophenol	ND	ug/L	10.0	1	04/04/15 09:15	04/07/15 02:19	87-86-5	
Phenanthrene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	85-01-8	

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ANALYTICAL RESULTS

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

Sample: CONCORD PROCESS WATER Lab ID: 92243396001 Collected: 03/31/15 08:30 Received: 03/31/15 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
Phenol	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	108-95-2	
Pyrene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	1	04/04/15 09:15	04/07/15 02:19	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1	04/04/15 09:15	04/07/15 02:19	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	41	%	10-120	1	04/04/15 09:15	04/07/15 02:19	4165-60-0	
2-Fluorobiphenyl (S)	39	%	15-120	1	04/04/15 09:15	04/07/15 02:19	321-60-8	
Terphenyl-d14 (S)	46	%	11-131	1	04/04/15 09:15	04/07/15 02:19	1718-51-0	
Phenol-d6 (S)	13	%	10-120	1	04/04/15 09:15	04/07/15 02:19	13127-88-3	
2-Fluorophenol (S)	22	%	10-120	1	04/04/15 09:15	04/07/15 02:19	367-12-4	
2,4,6-Tribromophenol (S)	33	%	10-137	1	04/04/15 09:15	04/07/15 02:19	118-79-6	
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D							
Sulfide	ND	mg/L	0.10	1		04/02/15 14:45	18496-25-8	
Total Nitrogen Calculation	Analytical Method: TKN+NO3+NO2 Calculation							
Total Nitrogen	0.75	mg/L	0.12	1		04/06/15 09:53		
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	ND	mg/L	0.10	1		04/03/15 15:10	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	ND	mg/L	0.50	1		04/02/15 23:29	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.75	mg/L	0.020	1		04/01/15 15:41		
365.1 Phosphorus, Total	Analytical Method: EPA 365.1							
Phosphorus	ND	mg/L	0.050	1		04/01/15 23:47	7723-14-0	
420.4 Phenolics, Total	Analytical Method: EPA 420.4							
Phenol	ND	mg/L	0.010	1		04/08/15 17:16	108-95-2	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0080	1		04/04/15 15:47	57-12-5	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: GCSV/20867 | Analysis Method: EPA 1664B
QC Batch Method: EPA 1664B | Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 92243396001

METHOD BLANK: 1427180 | Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	04/06/15 09:19	

LABORATORY CONTROL SAMPLE: 1427181

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	37.3	93	78-114	

MATRIX SPIKE SAMPLE: 1427182

Parameter	Units	92243669001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	36.2	90	78-114	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: OEXT/34022 | Analysis Method: EPA 608
QC Batch Method: EPA 3510 | Analysis Description: 608 GCS Pest PCB
Associated Lab Samples: 92243396001

METHOD BLANK: 1426645 | Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	04/06/15 21:17	
4,4'-DDE	ug/L	ND	0.050	04/06/15 21:17	
4,4'-DDT	ug/L	ND	0.050	04/06/15 21:17	
Aldrin	ug/L	ND	0.050	04/06/15 21:17	
alpha-BHC	ug/L	ND	0.050	04/06/15 21:17	
beta-BHC	ug/L	ND	0.050	04/06/15 21:17	
Chlordane (Technical)	ug/L	ND	0.50	04/06/15 21:17	
delta-BHC	ug/L	ND	0.050	04/06/15 21:17	
Dieldrin	ug/L	ND	0.050	04/06/15 21:17	
Endosulfan I	ug/L	ND	0.050	04/06/15 21:17	
Endosulfan II	ug/L	ND	0.050	04/06/15 21:17	
Endosulfan sulfate	ug/L	ND	0.050	04/06/15 21:17	
Endrin	ug/L	ND	0.050	04/06/15 21:17	
Endrin aldehyde	ug/L	ND	0.050	04/06/15 21:17	
gamma-BHC (Lindane)	ug/L	ND	0.050	04/06/15 21:17	
Heptachlor	ug/L	ND	0.050	04/06/15 21:17	
Heptachlor epoxide	ug/L	ND	0.050	04/06/15 21:17	
PCB-1016 (Aroclor 1016)	ug/L	ND	0.50	04/06/15 21:17	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	04/06/15 21:17	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	04/06/15 21:17	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.50	04/06/15 21:17	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.50	04/06/15 21:17	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	04/06/15 21:17	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	04/06/15 21:17	
Toxaphene	ug/L	ND	0.50	04/06/15 21:17	
Decachlorobiphenyl (S)	%	65	20-138	04/06/15 21:17	
Tetrachloro-m-xylene (S)	%	37	20-110	04/06/15 21:17	

LABORATORY CONTROL SAMPLE: 1426646

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.23	94	31-141	
4,4'-DDE	ug/L	.25	0.21	85	30-145	
4,4'-DDT	ug/L	.25	0.23	94	25-160	
Aldrin	ug/L	.25	0.16	65	42-122	
alpha-BHC	ug/L	.25	0.22	87	37-134	
beta-BHC	ug/L	.25	0.23	95	17-147	
delta-BHC	ug/L	.25	0.23	93	19-140	
Dieldrin	ug/L	.25	0.23	92	36-146	
Endosulfan I	ug/L	.25	0.22	91	45-153	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

LABORATORY CONTROL SAMPLE: 1426646

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endosulfan II	ug/L	.25	0.25	100	1-202	
Endosulfan sulfate	ug/L	.25	0.25	99	26-144	
Endrin	ug/L	.25	0.26	106	30-147	
Endrin aldehyde	ug/L	.25	0.22	87	50-150	
gamma-BHC (Lindane)	ug/L	.25	0.22	89	32-127	
Heptachlor	ug/L	.25	0.18	74	34-111	
Heptachlor epoxide	ug/L	.25	0.22	88	41-126	
Decachlorobiphenyl (S)	%			72	20-138	
Tetrachloro-m-xylene (S)	%			81	20-110	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: OEXT/34008 | Analysis Method: EPA 625
QC Batch Method: EPA 625 | Analysis Description: 625 MSS
Associated Lab Samples: 92243396001

METHOD BLANK: 1426139 | Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	04/06/15 23:38	
2,4,6-Trichlorophenol	ug/L	ND	10.0	04/06/15 23:38	
2,4-Dichlorophenol	ug/L	ND	5.0	04/06/15 23:38	
2,4-Dimethylphenol	ug/L	ND	10.0	04/06/15 23:38	
2,4-Dinitrophenol	ug/L	ND	50.0	04/06/15 23:38	
2,4-Dinitrotoluene	ug/L	ND	5.0	04/06/15 23:38	
2,6-Dinitrotoluene	ug/L	ND	5.0	04/06/15 23:38	
2-Chloronaphthalene	ug/L	ND	5.0	04/06/15 23:38	
2-Chlorophenol	ug/L	ND	5.0	04/06/15 23:38	
2-Nitrophenol	ug/L	ND	5.0	04/06/15 23:38	
3,3'-Dichlorobenzidine	ug/L	ND	25.0	04/06/15 23:38	
4,6-Dinitro-2-methylphenol	ug/L	ND	20.0	04/06/15 23:38	
4-Bromophenylphenyl ether	ug/L	ND	5.0	04/06/15 23:38	
4-Chloro-3-methylphenol	ug/L	ND	5.0	04/06/15 23:38	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	04/06/15 23:38	
4-Nitrophenol	ug/L	ND	50.0	04/06/15 23:38	
Acenaphthene	ug/L	ND	5.0	04/06/15 23:38	
Acenaphthylene	ug/L	ND	5.0	04/06/15 23:38	
Anthracene	ug/L	ND	5.0	04/06/15 23:38	
Benzo(a)anthracene	ug/L	ND	5.0	04/06/15 23:38	
Benzo(a)pyrene	ug/L	ND	5.0	04/06/15 23:38	
Benzo(b)fluoranthene	ug/L	ND	5.0	04/06/15 23:38	
Benzo(g,h,i)perylene	ug/L	ND	5.0	04/06/15 23:38	
Benzo(k)fluoranthene	ug/L	ND	5.0	04/06/15 23:38	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	04/06/15 23:38	
bis(2-Chloroethyl) ether	ug/L	ND	5.0	04/06/15 23:38	
bis(2-Chloroisopropyl) ether	ug/L	ND	5.0	04/06/15 23:38	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	04/06/15 23:38	
Butylbenzylphthalate	ug/L	ND	5.0	04/06/15 23:38	
Chrysene	ug/L	ND	5.0	04/06/15 23:38	
Di-n-butylphthalate	ug/L	ND	5.0	04/06/15 23:38	
Di-n-octylphthalate	ug/L	ND	5.0	04/06/15 23:38	
Dibenz(a,h)anthracene	ug/L	ND	5.0	04/06/15 23:38	
Diethylphthalate	ug/L	ND	5.0	04/06/15 23:38	
Dimethylphthalate	ug/L	ND	5.0	04/06/15 23:38	
Fluoranthene	ug/L	ND	5.0	04/06/15 23:38	
Fluorene	ug/L	ND	5.0	04/06/15 23:38	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	04/06/15 23:38	
Hexachlorobenzene	ug/L	ND	5.0	04/06/15 23:38	
Hexachlorocyclopentadiene	ug/L	ND	10.0	04/06/15 23:38	
Hexachloroethane	ug/L	ND	5.0	04/06/15 23:38	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

METHOD BLANK: 1426139 Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	04/06/15 23:38	
Isophorone	ug/L	ND	10.0	04/06/15 23:38	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	04/06/15 23:38	
N-Nitrosodimethylamine	ug/L	ND	5.0	04/06/15 23:38	
N-Nitrosodiphenylamine	ug/L	ND	10.0	04/06/15 23:38	
Naphthalene	ug/L	ND	5.0	04/06/15 23:38	
Nitrobenzene	ug/L	ND	5.0	04/06/15 23:38	
Pentachlorophenol	ug/L	ND	10.0	04/06/15 23:38	
Phenanthrene	ug/L	ND	5.0	04/06/15 23:38	
Phenol	ug/L	ND	5.0	04/06/15 23:38	
Pyrene	ug/L	ND	5.0	04/06/15 23:38	
2,4,6-Tribromophenol (S)	%	63	10-137	04/06/15 23:38	
2-Fluorobiphenyl (S)	%	56	15-120	04/06/15 23:38	
2-Fluorophenol (S)	%	33	10-120	04/06/15 23:38	
Nitrobenzene-d5 (S)	%	56	10-120	04/06/15 23:38	
Phenol-d6 (S)	%	19	10-120	04/06/15 23:38	
Terphenyl-d14 (S)	%	70	11-131	04/06/15 23:38	

LABORATORY CONTROL SAMPLE & LCSD: 1426140 1426141

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	27.2	28.3	54	57	44-142	4	30	
2,4,6-Trichlorophenol	ug/L	50	34.4	37.2	69	74	37-144	8	30	
2,4-Dichlorophenol	ug/L	50	38.5	34.2	77	68	1-191	12	30	
2,4-Dimethylphenol	ug/L	50	37.0	31.5	74	63	32-119	16	30	
2,4-Dinitrophenol	ug/L	250	87.3	102	35	41	1-181	16	30	
2,4-Dinitrotoluene	ug/L	50	44.9	47.0	90	94	39-139	5	30	
2,6-Dinitrotoluene	ug/L	50	45.0	44.0	90	88	50-158	2	30	
2-Chloronaphthalene	ug/L	50	29.9	31.6	60	63	60-118	6	30	
2-Chlorophenol	ug/L	50	29.8	30.3	60	61	23-134	2	30	
2-Nitrophenol	ug/L	50	40.4	35.3	81	71	29-182	13	30	
3,3'-Dichlorobenzidine	ug/L	100	82.1	92.4	82	92	1-262	12	30	
4,6-Dinitro-2-methylphenol	ug/L	100	49.1	55.8	49	56	1-181	13	30	
4-Bromophenylphenyl ether	ug/L	50	39.5	38.9	79	78	53-127	1	30	
4-Chloro-3-methylphenol	ug/L	100	64.8	77.7	65	78	22-147	18	30	
4-Chlorophenylphenyl ether	ug/L	50	38.5	39.4	77	79	25-158	2	30	
4-Nitrophenol	ug/L	250	71.1	98.0	28	39	1-132	32	30	R1
Acenaphthene	ug/L	50	34.1	34.7	68	69	47-145	2	30	
Acenaphthylene	ug/L	50	38.0	35.6	76	71	33-145	6	30	
Anthracene	ug/L	50	40.2	44.6	80	89	1-166	10	30	
Benzo(a)anthracene	ug/L	50	40.9	44.4	82	89	33-143	8	30	
Benzo(a)pyrene	ug/L	50	42.8	45.3	86	91	17-163	6	30	
Benzo(b)fluoranthene	ug/L	50	44.5	43.1	89	86	24-159	3	30	
Benzo(g,h,i)perylene	ug/L	50	40.1	42.6	80	85	1-219	6	30	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

LABORATORY CONTROL SAMPLE & LCSD: 1426140 1426141

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzo(k)fluoranthene	ug/L	50	39.5	40.8	79	82	11-162	3	30	
bis(2-Chloroethoxy)methane	ug/L	50	36.9	33.4	74	67	33-184	10	30	
bis(2-Chloroethyl) ether	ug/L	50	33.8	33.7	68	67	12-158	0	30	
bis(2-Chloroisopropyl) ether	ug/L	50	34.6	31.3	69	63	36-166	10	30	
bis(2-Ethylhexyl)phthalate	ug/L	50	50.7	51.3	101	103	8-158	1	30	
Butylbenzylphthalate	ug/L	50	48.9	47.9	98	96	1-152	2	30	
Chrysene	ug/L	50	40.7	43.7	81	87	17-168	7	30	
Di-n-butylphthalate	ug/L	50	46.5	52.8	93	106	1-118	13	30	
Di-n-octylphthalate	ug/L	50	65.6	64.7	131	129	4-146	1	30	
Dibenz(a,h)anthracene	ug/L	50	45.7	45.3	91	91	1-227	1	30	
Diethylphthalate	ug/L	50	47.3	48.8	95	98	1-114	3	30	
Dimethylphthalate	ug/L	50	40.1	45.0	80	90	1-112	11	30	
Fluoranthene	ug/L	50	53.7	59.5	107	119	26-137	10	30	
Fluorene	ug/L	50	41.6	42.7	83	85	59-121	3	30	
Hexachloro-1,3-butadiene	ug/L	50	24.7	25.7	49	51	24-116	4	30	
Hexachlorobenzene	ug/L	50	39.3	40.8	79	82	1-152	4	30	
Hexachlorocyclopentadiene	ug/L	50	12.6	12.0	25	24	25-150	5	30	L0
Hexachloroethane	ug/L	50	26.1	24.4	52	49	40-113	7	30	
Indeno(1,2,3-cd)pyrene	ug/L	50	46.6	45.5	93	91	1-171	2	30	
Isophorone	ug/L	50	31.9	34.1	64	68	21-196	7	30	
N-Nitroso-di-n-propylamine	ug/L	50	35.1	33.7	70	67	1-230	4	30	
N-Nitrosodimethylamine	ug/L	50	19.8	22.7	40	45	25-150	14	30	
N-Nitrosodiphenylamine	ug/L	50	41.2	38.2	82	76	25-150	7	30	
Naphthalene	ug/L	50	28.9	30.3	58	61	21-133	5	30	
Nitrobenzene	ug/L	50	34.7	34.7	69	69	35-180	0	30	
Pentachlorophenol	ug/L	100	41.8	53.5	42	53	14-176	25	30	
Phenanthrene	ug/L	50	38.5	42.4	77	85	54-120	10	30	
Phenol	ug/L	50	14.8	15.1	30	30	5-112	2	30	
Pyrene	ug/L	50	46.2	37.1	92	74	52-115	22	30	
2,4,6-Tribromophenol (S)	%				88	89	10-137			
2-Fluorobiphenyl (S)	%				60	61	15-120			
2-Fluorophenol (S)	%				35	38	10-120			
Nitrobenzene-d5 (S)	%				66	63	10-120			
Phenol-d6 (S)	%				25	25	10-120			
Terphenyl-d14 (S)	%				96	78	11-131			

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: OEXT/34052 Analysis Method: EPA 8082
QC Batch Method: EPA 3510 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 92243396001

METHOD BLANK: 1427835 Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.50	04/08/15 03:37	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	04/08/15 03:37	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	04/08/15 03:37	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.50	04/08/15 03:37	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.50	04/08/15 03:37	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	04/08/15 03:37	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	04/08/15 03:37	
Decachlorobiphenyl (S)	%	41	10-132	04/08/15 03:37	

LABORATORY CONTROL SAMPLE & LCSD: 1427836 1427837

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	3.5	4.3	70	87	50-150	21	30	
PCB-1260 (Aroclor 1260)	ug/L	5	4.1	4.3	82	86	50-150	5	30	
Decachlorobiphenyl (S)	%				43	61	10-132			

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: WET/36578 — Analysis Method: SM 4500-S2D
QC Batch Method: SM 4500-S2D — Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 92243396001

METHOD BLANK: 1424931 — Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	04/02/15 14:45	

LABORATORY CONTROL SAMPLE: 1424932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	.5	0.55	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1424933 — 1424934

Parameter	Units	92243266001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Sulfide	mg/L	ND	.5	.5	0.52	0.52	104	104	90-110	0	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: WETA/22421 — Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 — Analysis Description: 350.1 Ammonia, Distilled
Associated Lab Samples: 92243396001

METHOD BLANK: 1424993 — Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	04/03/15 15:04	

LABORATORY CONTROL SAMPLE: 1424994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1424995 — 1424996

Parameter	Units	92243219001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Nitrogen, Ammonia	mg/L	0.16	5	5	0.14	0.16	0	0	90-110	13	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1424997 — 1424998

Parameter	Units	92243337002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Nitrogen, Ammonia	mg/L	2.5	5	5	2.4	2.4	0	0	90-110	0	M1

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: WETA/22406 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 92243396001

METHOD BLANK: 1423891 Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	04/02/15 23:06	

LABORATORY CONTROL SAMPLE: 1423892

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1423893 1423894

Parameter	Units	92242468013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	ND	10	10	11.2	11.2	108	109	90-110	0	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1423895 1423896

Parameter	Units	92243074001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	1.1	10	10	12.1	12.3	111	112	90-110	1	M1

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: WETA/22414 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 92243396001

METHOD BLANK: 1424308 | Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.020	04/01/15 15:27	

LABORATORY CONTROL SAMPLE: 1424309

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1424310 1424311

Parameter	Units	92243157001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.52	2.5	2.5	3.0	3.0	101	101	75-125	0	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1424312 1424313

Parameter	Units	92243042003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.69	2.5	2.5	2.8	2.8	85	84	75-125	0	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: WETA/22404 — Analysis Method: EPA 365.1
QC Batch Method: EPA 365.1 — Analysis Description: 365.1 Phosphorus, Total
Associated Lab Samples: 92243396001

METHOD BLANK: 1423879 — Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	04/01/15 23:25	

LABORATORY CONTROL SAMPLE: 1423880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1423881 — 1423882

Parameter	Units	92243042003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Phosphorus	mg/L	20.3	12.5	12.5	33.0	32.7	102	100	90-110	1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1423883 — 1423884

Parameter	Units	92243002001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Phosphorus	mg/L	ND	2.5	2.5	2.7	2.7	106	106	90-110	0	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: WETA/22472 | Analysis Method: EPA 420.4
QC Batch Method: EPA 420.4 | Analysis Description: 420.4 Phenolics
Associated Lab Samples: 92243396001

METHOD BLANK: 1428356 | Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phenol	mg/L	ND	0.010	04/08/15 17:09	

LABORATORY CONTROL SAMPLE: 1428357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenol	mg/L	.05	0.050	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1428358 1428359

Parameter	Units	92243074001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Phenol	mg/L	0.031	.05	.05	0.077	0.076	93	91	90-110	1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1429086 1429087

Parameter	Units	92243074002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Phenol	mg/L	ND	.05	.05	0.051	0.051	101	102	90-110	2	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: WETA/22441 | Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E | Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92243396001

METHOD BLANK: 1426306 | Matrix: Water
Associated Lab Samples: 92243396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0080	04/04/15 15:40	

LABORATORY CONTROL SAMPLE: 1426307

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1426308 1426309

Parameter	Units	92242585002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.054	.0054J	54	5	75-125		M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1426415 1426416

Parameter	Units	92243185012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.10	0.10	103	103	75-125	0	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

Sample: CONCORD PROCESS WATER **Lab ID: 92243396001** **Collected: 03/31/15 08:30** **Received: 03/31/15 11:30** **Matrix: Water**
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**0.760 ± 1.09 (2.32)** **C:NA T:NA**	pCi/L	04/28/15 07:15	12587-46-1	
Gross Beta	EPA 900.0	**1.12 ± 1.36 (2.94)** **C:NA T:NA**	pCi/L	04/28/15 07:15	12587-47-2	
Radium-226	EPA 903.1	**0.625 ± 0.708 (0.565)** **C:NA T:84%**	pCi/L	04/27/15 10:01	13982-63-3	
Radium-228	EPA 904.0	**-0.254 ± 0.438 (1.09)** **C:78% T:66%**	pCi/L	04/27/15 17:10	15262-20-1	
Total Radium	Total Radium Calculation	**0.371 ± 1.15 (1.66)**	pCi/L	04/29/15 07:04	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: RADC/24173 | Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 | Analysis Description: 903.1 Radium-226
Associated Lab Samples: 92243396001

METHOD BLANK: 883105 | Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.300 ± 0.465 (0.806) C:NA T:92%	pCi/L	04/27/15 09:50	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: RADC/24192 | Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 | Analysis Description: 904.0 Radium 228
Associated Lab Samples: 92243396001

METHOD BLANK: 884145 | Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.595 ± 0.432 (0.858) C:86% T:88%	pCi/L	04/27/15 17:21	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

QC Batch: RADC/24206 Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0 Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 92243396001

METHOD BLANK: 884159 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	-0.270 ± 0.444 (1.54) C:NA T:NA	pCi/L	04/28/15 07:15	
Gross Beta	-0.766 ± 0.657 (1.93) C:NA T:NA	pCi/L	04/28/15 07:15	

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QUALIFIERS

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-PA	Pace Analytical Services - Greensburg

WORKORDER QUALIFIERS

WO: 92243396

[1] Low volume received. Client advised to analyze at low volume.

SAMPLE QUALIFIERS

Sample: 92243396001

[1] Upon receipt at the laboratory, 6 mls of nitric acid were added to the samples to meet the sample preservation requirement of pH <2 for radiological analyses

[2] Low volume received. Client advised to analyze at low volume.

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

ANALYTE QUALIFIERS

L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CONCORD PROCESS WATER
Pace Project No.: 92243396

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92243396001	CONCORD PROCESS WATER	EPA 1664B	GCSV/20867		
92243396001	CONCORD PROCESS WATER	EPA 3510	OEXT/34022	EPA 608	GCSV/20877
92243396001	CONCORD PROCESS WATER	EPA 3510	OEXT/34052	EPA 8082	GCSV/20895
92243396001	CONCORD PROCESS WATER	EPA 625	OEXT/34008	EPA 625	MSSV/10496
92243396001	CONCORD PROCESS WATER	EPA 900.0	RADC/24206		
92243396001	CONCORD PROCESS WATER	EPA 903.1	RADC/24173		
92243396001	CONCORD PROCESS WATER	EPA 904.0	RADC/24192		
92243396001	CONCORD PROCESS WATER	Total Radium Calculation	RADC/24261		
92243396001	CONCORD PROCESS WATER	SM 4500-S2D	WET/36578		
92243396001	CONCORD PROCESS WATER	TKN+NO3+NO2 Calculation	WET/36647		
92243396001	CONCORD PROCESS WATER	EPA 350.1	WETA/22421		
92243396001	CONCORD PROCESS WATER	EPA 351.2	WETA/22406		
92243396001	CONCORD PROCESS WATER	EPA 353.2	WETA/22414		
92243396001	CONCORD PROCESS WATER	EPA 365.1	WETA/22404		
92243396001	CONCORD PROCESS WATER	EPA 420.4	WETA/22472		
92243396001	CONCORD PROCESS WATER	SM 4500-CN-E	WETA/22441		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page of 1807405

Section A Required Client Information:
Company: Iluka Resources Inc
Address: 12472 St. John Church Rd, Stony Creek VA 23882
Email To: kevin.rideout@iluka.com
Phone: 434-348-4316 Fax:
Requested Due Date/TAT: 10 Days

Section B Required Project Information:
Report To: kevin.rideout@iluka.com
Copy To:
Purchase Order No.: 4500363877
Project Name:
Project Number:

Section C Invoice Information:
Attention: Dawn Hall
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: ☑ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER
Site Location STATE: Concord VA

Section D Required Client Information — Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Alpha, Beta, Ra 226	Total Radium	Sulfide	Cyanide	Sulfite	Ammonia, Nitrite, Nitrate	Total Phos	Phenols	Oil & Grease	BOD5 (BPCB)	TRO	Cl2 & Cl25	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1		~~WW~~	~~C~~	~~3/30/15~~	~~09:30~~																											92243916
2	Concord Process Water	WW	C	3/30/15	09:30	3/31/15	08:30	3.4	11	6			1	1	1		2		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	James W Barbour / Iluka	3/31/15	10:00	Preston B. Hamill	3-31-15	10:00				
	Preston B. Hamill	3-31-15	11:30	Rachel Burnett	3-31	11:30	0.2			

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: James W Barbour
SIGNATURE of SAMPLER: James W Barbour DATE Signed (MM/DD/YY): 3/31/15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical® www.pacelabs.com	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: December 3, 2013 Page 1 of 2
	Document No.: F-RMD-CS-001-rev.01	Issuing Authorities: Pace Asheville Quality Office

Client Name: Iluka

Where Received: ☐ Huntersville ☐ Asheville ☐ Eden ☐ Raleigh ☑ Richmond, VA

Courier (Circle): Fed Ex UPS USPS (Client) Commercial Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☑ None ☐ Other_____

Circle Thermometer Used: (RMD001) RMD002 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor: Add / Subtract _____ C

Corrected Cooler Temp.: 0.2 C Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and initials of person examining contents:_____

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6. Sulfite - 15 mins.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WW		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: BLG Date: 3/31/15

SRF Review: Date:

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

Place label here

OR

Handwrite project number (if no label available)

Pace Analytical www.pacelabs.com	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: December 3, 2013 Page 2 of 2
	Document No.: F-RMD-CS-001-Rev.00	Issuing Authorities: Pace Asheville Quality Office

Sample Bottle Codes

Item#	BP4U	BP3U	BP2U	BP1U	BP3S	BP3N	BP3Z	BP3C	WGFU	AG1U	AG1H	AG2U	AG1S	AG3S	AG3A	DG9H	VG9T	VG9U	DG9S	VOAK(4vials per kit)	V/GK(3vials per kit)	SP5T	SP2T	NaOH & Zn Acetate	
1		1		1	1			1		4	1			1										1	

Client Sample ID(s)	Sample Discrepancy

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation Adjusted	Time Preservation Adjusted	Amount of Preservative added	Lot# of Preservative

Bottle Code Key

125 ml Plastic Unp: BP4U
250 ml Plastic Unp: BP3U
500 ml Plastic Unp: BP2U
1 Liter Plastic Unp: BP1U
250 ml Plastic H2SO4: BP3S
250 ml Plastic HNO3: BP3N
250 ml Plastic ZN Acetate: BP3Z
250 ml Plastic NaOH: BP3C
Wide mouthed glass jar unp: WGFU

1 Liter Amber Unp: AG1U
1 Liter Amber HCl: AG1H
500 ml Amber Unp: AG2U
1 Liter Amber H2SO4: AG1S
250 ml Amber H2SO4: AG3S
250 ml Amber NH4CL: AG3A
40 ml VOA HCl: DG9H
40 ml VOA Na2S2O3: VG9T
40 ml VOA Unp: VG9U

40 ml VOA H2SO4: DG9S
5035 Kit: VOAK
VPH / Gas Kit : V/GK
125 ml Sterile Plastic: SP5T
250 ml Sterile Plastic: SP2T

Part I second set will be delivered next week.

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (*use the same format*) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO.

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (*specify if blank*) a. CONCEN-TRATION	b. MASS	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
✓ a. Biochemical Oxygen Demand (BOD)												
✓ b. Chemical Oxygen Demand (COD)												
✓ c. Total Organic Carbon (TOC)												
✓ d. Total Suspended Solids (TSS)												
e. Ammonia (as N)												
f. Flow	VALUE		VALUE		VALUE					VALUE		
g. Temperature (*winter*)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (*summer*)	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM				STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCEN-TRATION	b. MASS	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)														
b. Chlorine, Total Residual														
c. Color														
d. Fecal Coliform														
e. Fluoride (16984-48-8)														
f. Nitrate-Nitrite (as N)														

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)														
h. Oil and Grease														
i. Phosphorus (as P), Total (7723-14-0)														
j. Radioactivity														
(1) Alpha, Total														
(2) Beta, Total														
(3) Radium, Total														
(4) Radium 226, Total														
k. Sulfate (as SO_4) (14808-79-8)														
l. Sulfide (as S)														
m. Sulfite (as SO_3) (14265-45-3)														
n. Surfactants														
o. Aluminum, Total (7429-90-5)														
p. Barium, Total (7440-39-3)														
q. Boron, Total (7440-42-8)														
r. Cobalt, Total (7440-48-4)														
s. Iron, Total (7439-89-6)														
t. Magnesium, Total (7439-95-4)														
u. Molybdenum, Total (7439-98-7)														
v. Manganese, Total (7439-96-5)														
w. Tin, Total (7440-31-5)														
x. Titanium, Total (7440-32-6)														

 CONTINUE ON PAGE V-3

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and the outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)															
2M. Arsenic, Total (7440-38-2)															
3M. Beryllium, Total (7440-41-7)															
4M. Cadmium, Total (7440-43-9)															
5M. Chromium, Total (7440-47-3)															
6M. Copper, Total (7440-50-8)															
7M. Lead, Total (7439-92-1)															
8M. Mercury, Total (7439-97-6)															
9M. Nickel, Total (7440-02-0)															
10M. Selenium, Total (7782-49-2)															
11M. Silver, Total (7440-22-4)															
12M. Thallium, Total (7440-28-0)															
13M. Zinc, Total (7440-66-6)															
14M. Cyanide, Total (57-12-5)															
15M. Phenols, Total															
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)				DESCRIBE RESULTS											

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)															
2V. Acrylonitrile (107-13-1)															
3V. Benzene (71-43-2)															
4V. Bis (Chloromethyl) Ether (542-88-1)															
5V. Bromoform (75-25-2)															
6V. Carbon Tetrachloride (56-23-5)															
7V. Chlorobenzene (108-90-7)															
8V. Chlorodibromomethane (124-48-1)															
9V. Chloroethane (75-00-3)															
10V. 2-Chloroethylvinyl Ether (110-75-8)															
11V. Chloroform (67-66-3)															
12V. Dichlorobromomethane (75-27-4)															
13V. Dichlorodifluoromethane (75-71-8)															
14V. 1,1-Dichloroethane (75-34-3)															
15V. 1,2-Dichloroethane (107-06-2)															
16V. 1,1-Dichloroethylene (75-35-4)															
17V. 1,2-Dichloropropane (78-87-5)															
18V. 1,3-Dichloropropylene (542-75-6)															
19V. Ethylbenzene (100-41-4)															
20V. Methyl Bromide (74-83-9)															
21V. Methyl Chloride (74-87-3)															

 CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)															
23V. 1,1,2,2-Tetrachloroethane (79-34-5)															
24V. Tetrachloro-ethylene (127-18-4)															
25V. Toluene (108-88-3)															
26V. 1,2-Trans-Dichloroethylene (156-60-5)															
27V. 1,1,1-Trichloro-ethane (71-55-6)															
28V. 1,1,2-Trichloro-ethane (79-00-5)															
29V Trichloro-ethylene (79-01-6)															
30V. Trichloro-fluoromethane (75-69-4)															
31V. Vinyl Chloride (75-01-4)															
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)															
2A. 2,4-Dichloro-phenol (120-83-2)															
3A. 2,4-Dimethyl-phenol (105-67-9)															
4A. 4,6-Dinitro-O-Cresol (534-52-1)															
5A. 2,4-Dinitro-phenol (51-28-5)															
6A. 2-Nitrophenol (88-75-5)															
7A. 4-Nitrophenol (100-02-7)															
8A. P-Chloro-M-Cresol (59-50-7)															
9A. Pentachloro-phenol (87-86-5)															
10A. Phenol (108-95-2)															
11A. 2,4,6-Trichloro-phenol (88-05-2)															

 CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)															
2B. Acenaphtylene (208-96-8)															
3B. Anthracene (120-12-7)															
4B. Benzidine (92-87-5)															
5B. Benzo (a) Anthracene (56-55-3)															
6B. Benzo (a) Pyrene (50-32-8)															
7B. 3,4-Benzo-fluoranthene (205-99-2)															
8B. Benzo (ghi) Perylene (191-24-2)															
9B. Benzo (k) Fluoranthene (207-08-9)															
10B. Bis (2-Chloro-ethoxy) Methane (111-91-1)															
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)															
12B. Bis (2-Chloroisopropyl) Ether (102-80-1)															
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)															
14B. 4-Bromophenyl Phenyl Ether (101-55-3)															
15B. Butyl Benzyl Phthalate (85-68-7)															
16B. 2-Chloro-naphthalene (91-58-7)															
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)															
18B. Chrysene (218-01-9)															
19B. Dibenzo (a,h) Anthracene (53-70-3)															
20B. 1,2-Dichloro-benzene (95-50-1)															
21B. 1,3-Di-chloro-benzene (541-73-1)															

CONTINUE ON PAGE V-7

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichloro-benzene (106-46-7)															
23B. 3,3-Dichloro-benzidine (91-94-1)															
24B. Diethyl Phthalate (84-66-2)															
25B. Dimethyl Phthalate (131-11-3)															
26B. Di-N-Butyl Phthalate (84-74-2)															
27B. 2,4-Dinitro-toluene (121-14-2)															
28B. 2,6-Dinitro-toluene (606-20-2)															
29B. Di-N-Octyl Phthalate (117-84-0)															
30B. 1,2-Diphenyl-hydrazine (as Ana-benzene) (122-66-7)															
31B. Fluoranthene (206-44-0)															
32B. Fluorene (86-73-7)															
33B. Hexachloro-benzene (118-74-1)															
34B. Hexachloro-butadiene (87-68-3)															
35B. Hexachloro-cyclopentadiene (77-47-4)															
36B Hexachloro-ethane (67-72-1)															
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)															
38B. Isophorone (78-59-1)															
39B. Naphthalene (91-20-3)															
40B. Nitrobenzene (98-95-3)															
41B. N-Nitro-sodimethylamine (62-75-9)															
42B. N-Nitrosodi-N-Propylamine (621-64-7)															

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitro-sodiphenylamine (86-30-6)															
44B. Phenanthrene (85-01-8)															
45B. Pyrene (129-00-0)															
46B. 1,2,4-Tri-chlorobenzene (120-82-1)															
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)															
2P. α-BHC (319-84-6)															
3P. β-BHC (319-85-7)															
4P. γ-BHC (58-89-9)															
5P. δ-BHC (319-86-8)															
6P. Chlordane (57-74-9)															
7P. 4,4'-DDT (50-29-3)															
8P. 4,4'-DDE (72-55-9)															
9P. 4,4'-DDD (72-54-8)															
10P. Dieldrin (60-57-1)															
11P. α-Endosulfan (115-29-7)															
12P. β-Endosulfan (115-29-7)															
13P. Endosulfan Sulfate (1031-07-8)															
14P. Endrin (72-20-8)															
15P. Endrin Aldehyde (7421-93-4)															
16P. Heptachlor (76-44-8)															

CONTINUE ON PAGE V-9

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (*continued*)															
17P. Heptachlor Epoxide (1024-57-3)															
18P. PCB-1242 (53469-21-9)															
19P. PCB-1254 (11097-69-1)															
20P. PCB-1221 (11104-28-2)															
21P. PCB-1232 (11141-16-5)															
22P. PCB-1248 (12672-29-6)															
23P. PCB-1260 (11096-82-5)															
24P. PCB-1016 (12674-11-2)															
25P. Toxaphene (8001-35-2)															

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92243396 **Workorder Name:** CONCORD PROCESS WATER **Results Requested** 4/7/2015

Report / Invoice To

Terri Page
Pace Analytical Eden
205 East Meadow Road
Suite A
Eden, NC 27288
Phone (336)623-8921
Email: terri.page@pacelabs.com

UL

P.O. PdSL00740

Subcontract To

Requested Analysis

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved																			LAB USE ONLY
1	CONCORD PROCESS WATER	3/31/2015 08:30	92243396001	Water							X													
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2				
3				

Comments

Cooler Temperature on Receipt °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92243396 **Workorder Name:** CONCORD PROCESS WATER **Owner Received Date:** 3/31/2015 **Results Requested By:** 4/7/2015

Report To

Terri Page
Pace Analytical Services, Inc.
9800 Kincey Ave., Suite 100
Huntersville, NC 28078
Phone (704)875-9092
Fax (704)875-9091

Subcontract To

Pace Analytical Ormond Beach
8 East Tower Circle
Ormond Beach, FL 32174
Phone (386)672-5668

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: X Sulfate	LAB USE ONLY
1	CONCORD PROCESS WATER	PS	3/31/2015 08:30	92243396001	Water	1	X	
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2				
3				

Comments

Cooler Temperature on Receipt °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical®
www.pacelabs.com

Ship To:
Pace Analytical Ormond Beach
8 East Tower Circle
Ormond Beach, FL 32174
Phone (386)672-5668

INTER_LABORATORY WORK ORDER # 92243396
(To be completed by sending lab)

Sending Project No:	92243396
Receiving Project No:	
Check Box for Consolidated Invoice	☐
Date Prepared:	03/31/15
REQUESTED COMPLETION DATE:	4/7/2015

Sending Region	IR92-Charlotte	Sending Project Mgr.	Terri Page
Receiving Region	IR35-Ormond Beach	External Client	ILUKA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Unit Price	Amount
Sulfate	BP3U		Unpreserved	1	$45.00	$45.00
					TOTAL	$45.00

Special Requirements: _____

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
Wet Chemistry	21	$45.00	$36.00	$9.00
* Custom Revenue Allocation	TOTAL	$45.00	$36.00	$9.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Chain of Custody Included: ☐ Yes ☐ No Return Samples to Sending Region: ☐ Yes ☐ No

Matrix: ☐ Soil ☐ Water ☐ Air ☐ Other (identify) _____

CONFIRMATION OF WORK COMPLETED

Date Completed: _____ Receiving Project Manager: _____

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92243396 **Workorder Name:** CONCORD PROCESS WATER **Owner Received Date:** 3/31/2015 **Results Requested By:** 4/7/2015

Report To

Terri Page
Pace Analytical Services, Inc.
9800 Kincey Ave., Suite 100
Huntersville, NC 28078
Phone (704)875-9092
Fax (704)875-9091

Subcontract To

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2, 3, & 4
Greensburg, PA 15601
Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unreserved	Requested Analysis: Alpha Beta	Alpha 226	Tot. Radium	LAB USE ONLY
1	CONCORD PROCESS WATER	PS	3/31/2015 08:30	92243396001	Water	1	X	X	X	
2										
3										
4										
5										

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2				
3				

Comments

Cooler Temperature on Receipt °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical®
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Ship To:
Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2, 3, & 4
Greensburg, PA 15601
Phone (724)850-5600

INTER_LABORATORY WORK ORDER # 92243396
(To be completed by sending lab)

Sending Project No	92243396
Receiving Project No	
Check Box for Consolidated Invoice	☐
Date Prepared	03/31/15
REQUESTED COMPLETION DATE	4/7/2015

Sending Region	IR92-Charlotte	Sending Project Mgr.	Terri Page
Receiving Region	IR30-Pittsburgh	External Client	ILUKA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Unit Price	Amount
Alpha Beta, rad226, tot. Radium	BP1U		Unpreserved	1	$200.00	$200.00
					TOTAL	$200.00

Special Requirements: _____

Receiving Region Department	Actg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
Waltz Mill Radiochemistry	38	$200.00	$160.00	$40.00
* Custom Revenue Allocation	TOTAL	$200.00	$160.00	$40.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Chain of Custody Included: ☐ Yes ☐ No Return Samples to Sending Region: ☐ Yes ☐ No

Matrix: ☐ Soil ☐ Water ☐ Air ☐ Other (identify) _____

CONFIRMATION OF WORK COMPLETED

Date Completed: _____ Receiving Project Manager: _____

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

June 18, 2015

Kevin Rideout

RE: Project: CONCORD PROCESS WATER
Pace Project No.: 92253102

Dear Kevin Rideout:
Enclosed are the analytical results for sample(s) received by the laboratory on June 05, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brittany L. Gibson

Brittany Gibson for
Terri Page
terri.page@pacelabs.com
Project Manager

Enclosures

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Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: CONCORD PROCESS WATER
Pace Project No.: 92253102

Asheville Certification IDs
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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SAMPLE ANALYTE COUNT

Project: CONCORD PROCESS WATER
Pace Project No.: 92253102

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92253102001	CONCORD PROCESS WATER	EPA 200.7	JMW	3	PASI-A
		SM 4500-Cl-E	SER	1	PASI-A

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ANALYTICAL RESULTS

Project: CONCORD PROCESS WATER
Pace Project No.: 92253102

Sample: CONCORD PROCESS WATER **Lab ID: 92253102001** Collected: 06/03/15 17:00 Received: 06/05/15 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Calcium	**5060**	ug/L	100	1	06/10/15 20:35	06/11/15 18:33	7440-70-2	
Magnesium	**1410**	ug/L	100	1	06/10/15 20:35	06/11/15 18:33	7439-95-4	
Hardness, Total (SM 2340B)	**18500**	ug/L	662	1	06/10/15 20:35	06/11/15 18:33		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	**7.4**	mg/L	1.0	1		06/12/15 04:48	16887-00-6	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92253102

QC Batch: MPRP/18672
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 MET
Associated Lab Samples: 92253102001

METHOD BLANK: 1480647
Matrix: Water
Associated Lab Samples: 92253102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	ug/L	ND	100	06/11/15 18:14	
Hardness, Total (SM 2340B)	ug/L	ND	662	06/11/15 18:14	
Magnesium	ug/L	ND	100	06/11/15 18:14	

LABORATORY CONTROL SAMPLE: 1480648

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	5000	4940	99	85-115	
Hardness, Total (SM 2340B)	ug/L		32600			
Magnesium	ug/L	5000	4920	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1480649 1480650

Parameter	Units	92253040001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Calcium	ug/L	11.2 mg/L	5000	5000	15000	14900	76	74	70-130	1	
Hardness, Total (SM 2340B)	ug/L	35.4 mg/L			63000	62500				1	
Magnesium	ug/L	1.8 mg/L	5000	5000	6220	6160	88	87	70-130	1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1480651 1480652

Parameter	Units	92253184001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Calcium	ug/L	12200	5000	5000	16000	16800	77	92	70-130	5	
Hardness, Total (SM 2340B)	ug/L	44800			70500	75200				6	
Magnesium	ug/L	3500	5000	5000	7410	8080	78	92	70-130	9	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: CONCORD PROCESS WATER
Pace Project No.: 92253102

QC Batch: WETA/23242 | Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E | Analysis Description: 4500 Chloride
Associated Lab Samples: 92253102001

METHOD BLANK: 1481788 | Matrix: Water
Associated Lab Samples: 92253102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	06/12/15 04:44	

LABORATORY CONTROL SAMPLE: 1481789

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.2	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1481790 1481791

Parameter	Units	92252070015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chloride	mg/L	28200 ug/L	20	20	49.3	47.3	106	96	90-110	4	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1481792 1481793

Parameter	Units	92253609001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chloride	mg/L	3.5	20	20	23.1	23.6	98	100	90-110	2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: CONCORD PROCESS WATER
Pace Project No.: 92253102

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CONCORD PROCESS WATER
Pace Project No.: 92253102

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92253102001	CONCORD PROCESS WATER	EPA 200.7	MPRP/18672	EPA 200.7	ICP/16752
92253102001	CONCORD PROCESS WATER	SM 4500-Cl-E	WETA/23242		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A Required Client Information:
- Company: Iluka Resources
- Address: 10472 St John Church Rd, Stony Creek, VA 23882
- Email To: Kevin.rideout@iluka.com
- Phone: Fax:
- Requested Due Date/TAT: ASAP

Section B Required Project Information:
- Report To: Kevin Rideout
- Copy To:
- Purchase Order No.: 4500363877
- Project Name: Concord Process Water
- Project Number:

Section C Invoice Information:
- Attention: Dawn Hall
- Company Name:
- Address:
- Pace Quote Reference:
- Pace Project Manager:
- Pace Profile #:

REGULATORY AGENCY: [X] NPDES [ ] GROUND WATER [ ] DRINKING WATER [ ] UST [ ] RCRA [ ] OTHER _____

Site Location STATE: VA

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Free Cyanide, Hardness, Chloride, Tributyltin

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Free Cyanide	Hardness	Chloride	Tributyltin	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Concord Process Water	WW	C	6/3/15	17:00	6/3/15	17:00	/	4	2		1		1					✓	✓	✓	✓		92253102
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Kevin Rideout / Iluka	6/5/15	8:00	Preston B. Hamlin	6-5-15	8:00	
	Preston B. Hamlin	6/5/15	9:35	Rachel Burress	6-5-15	9:35	32

SAMPLER NAME AND SIGNATURE
- PRINT Name of SAMPLER: Kevin Rideout
- SIGNATURE of SAMPLER: Kevin Rideout
- DATE Signed (MM/DD/YY): 6/4/15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical® www.pacelabs.com	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: May 15, 2015 Page 1 of 2*
	Document No.: F-MEC-CS-009-Rev.00	Issuing Authorities: Pace CAR Quality Office

* Page 2 of 2 is for Internal Use Only

Client Name: Iluka

Courier (Circle): Fed Ex UPS USPS (Client) Commercial Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals Intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other_____

Thermometer Used: (Circle) **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

RMD001 RMD002 Other:_____

Temp Correction Factor: Add / Subtract _____ C

Corrected Cooler Temp.: 3.2 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6-5-15 RSB

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☑Yes	☐No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WW				
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		RSB
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: BLG **Date:** 6/5/15

SRF Review: JB **Date:** 6/8/15

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

Place label here

OR

Handwrite project number (if no label available)

Pace Analytical www.pacelabs.com	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: May 15, 2015 Page 2 of 2
	Document No.: F-MEC-CS-012-rev.00	Issuing Authorities: Pace CAR Quality Office

Sample Bottle Codes

Item#	BP4U	BP3U	BP2U	BP1U	BP3S	BP3N	BP3Z	BP3C	WGFU	AG1U	AG1H	AG2U	AG1S	AG3S	AG3A	DG9H	VG9T	VG9U	DG9P	VOAK(6vials per kit)	V/GK(3vials per kit)	SP5T	SP2T	Cubitainer	TBT bottle
1		1				1		1																	1

Client Sample ID(s)	Sample Discrepancy

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation Adjusted	Time Preservation Adjusted	Amount of Preservative added	Lot# of Preservative

Bottle Code Key

125 ml Plastic Unp: BP4U
250 ml Plastic Unp: BP3U
500 ml Plastic Unp: BP2U
1 Liter Plastic Unp: BP1U
250 ml Plastic H2SO4: BP3S
250 ml Plastic HNO3: BP3N
250 ml Plastic ZN Acetate: BP3Z
250 ml Plastic NaOH: BP3C
Wide mouthed glass jar unp: WGFU

1 Liter Amber Unp: AG1U
1 Liter Amber HCl: AG1H
500 ml Amber Unp: AG2U
1 Liter Amber H2SO4: AG1S
250 ml Amber H2SO4: AG3S
250 ml Amber NH4CL: AG3A
40 ml VOA HCl: DG9H
40 ml VOA Na2S2O3: VG9T
40 ml VOA Unp: VG9U

40 ml VOA H2SO4: DG9P
5035 Kit: VOAK
VPH / Gas Kit : V/GK
125 ml Sterile Plastic: SP5T
250 ml Sterile Plastic: SP2T

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

July 07, 2015

Kevin Rideout

RE: Project: CONCORD PROCESS POND
Pace Project No.: 92254133

Dear Kevin Rideout:
Enclosed are the analytical results for sample(s) received by the laboratory on June 11, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Terri Page

Terri Page
terri.page@pacelabs.com
Project Manager

Enclosures

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(704)875-9092

CERTIFICATIONS

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

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SAMPLE ANALYTE COUNT

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92254133001	CONCORD PROCESS WATER	EPA 625	RES	58	PASI-C
		EPA 8260	GAW	13	PASI-C
		EPA 900.0	FCC	2	PASI-PA
		EPA 903.1	JC2	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

Sample: CONCORD PROCESS WATER **Lab ID: 92254133001** Collected: 06/10/15 16:15 Received: 06/11/15 09:38 Matrix: Water

Comments: • Upon receipt at the laboratory, 3 mls of nitric acid were added to the samples to meet the sample preservation requirement of pH <2 for radiological analyses.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
Acenaphthene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	83-32-9	
Acenaphthylene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	208-96-8	
Anthracene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	120-12-7	
Benzo(a)anthracene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	56-55-3	
Benzo(a)pyrene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	101-55-3	
Butylbenzylphthalate	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1	06/17/15 17:06	06/24/15 05:50	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	108-60-1	
2-Chloronaphthalene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	91-58-7	
2-Chlorophenol	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	7005-72-3	
Chrysene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	25.0	1	06/17/15 17:06	06/24/15 05:50	91-94-1	
2,4-Dichlorophenol	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	120-83-2	
Diethylphthalate	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	84-66-2	
2,4-Dimethylphenol	ND	ug/L	10.0	1	06/17/15 17:06	06/24/15 05:50	105-67-9	
Dimethylphthalate	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	131-11-3	
Di-n-butylphthalate	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	20.0	1	06/17/15 17:06	06/24/15 05:50	534-52-1	
2,4-Dinitrophenol	ND	ug/L	50.0	1	06/17/15 17:06	06/24/15 05:50	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	606-20-2	
Di-n-octylphthalate	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	117-81-7	
Fluoranthene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	206-44-0	
Fluorene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	87-68-3	
Hexachlorobenzene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1	06/17/15 17:06	06/24/15 05:50	77-47-4	
Hexachloroethane	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	193-39-5	
Isophorone	ND	ug/L	10.0	1	06/17/15 17:06	06/24/15 05:50	78-59-1	
Naphthalene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	91-20-3	
Nitrobenzene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	98-95-3	
2-Nitrophenol	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	1	06/17/15 17:06	06/24/15 05:50	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	62-75-9	

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(704)875-9092

ANALYTICAL RESULTS

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

Sample: CONCORD PROCESS WATER **Lab ID: 92254133001** Collected: 06/10/15 16:15 Received: 06/11/15 09:38 Matrix: Water

Comments: • Upon receipt at the laboratory, 3 mls of nitric acid were added to the samples to meet the sample preservation requirement of pH <2 for radiological analyses.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
N-Nitroso-di-n-propylamine	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1	06/17/15 17:06	06/24/15 05:50	86-30-6	
Pentachlorophenol	ND	ug/L	10.0	1	06/17/15 17:06	06/24/15 05:50	87-86-5	
Phenanthrene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	85-01-8	
Phenol	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	108-95-2	
Pyrene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	1	06/17/15 17:06	06/24/15 05:50	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1	06/17/15 17:06	06/24/15 05:50	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	32	%	10-120	1	06/17/15 17:06	06/24/15 05:50	4165-60-0	
2-Fluorobiphenyl (S)	26	%	15-120	1	06/17/15 17:06	06/24/15 05:50	321-60-8	
Terphenyl-d14 (S)	75	%	11-131	1	06/17/15 17:06	06/24/15 05:50	1718-51-0	
Phenol-d6 (S)	10	%	10-120	1	06/17/15 17:06	06/24/15 05:50	13127-88-3	
2-Fluorophenol (S)	14	%	10-120	1	06/17/15 17:06	06/24/15 05:50	367-12-4	
2,4,6-Tribromophenol (S)	53	%	10-137	1	06/17/15 17:06	06/24/15 05:50	118-79-6	
8260 MSV	Analytical Method: EPA 8260							
Bromomethane	ND	ug/L	10.0	1		06/20/15 11:30	74-83-9	
Chloromethane	ND	ug/L	5.0	1		06/20/15 11:30	74-87-3	
Dibromochloromethane	ND	ug/L	5.0	1		06/20/15 11:30	124-48-1	
1,1-Dichloroethane	ND	ug/L	5.0	1		06/20/15 11:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	1		06/20/15 11:30	107-06-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		06/20/15 11:30	156-60-5	
1,3-Dichloropropane	ND	ug/L	5.0	1		06/20/15 11:30	142-28-9	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	1		06/20/15 11:30	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	1		06/20/15 11:30	127-18-4	
Trichloroethene	ND	ug/L	5.0	1		06/20/15 11:30	79-01-6	
Surrogates								
4-Bromofluorobenzene (S)	72	%	70-130	1		06/20/15 11:30	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-130	1		06/20/15 11:30	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		06/20/15 11:30	2037-26-5	

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(704)875-9092

QUALITY CONTROL DATA

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

QC Batch: MSV/32233
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV
Associated Lab Samples: 92254133001

METHOD BLANK: 1490107
Matrix: Water
Associated Lab Samples: 92254133001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	06/20/15 06:35	
1,1-Dichloroethane	ug/L	ND	5.0	06/20/15 06:35	
1,2-Dichloroethane	ug/L	ND	5.0	06/20/15 06:35	
1,3-Dichloropropane	ug/L	ND	5.0	06/20/15 06:35	
Bromomethane	ug/L	ND	10.0	06/20/15 06:35	
Chloromethane	ug/L	ND	5.0	06/20/15 06:35	
Dibromochloromethane	ug/L	ND	5.0	06/20/15 06:35	
Tetrachloroethene	ug/L	ND	5.0	06/20/15 06:35	
trans-1,2-Dichloroethene	ug/L	ND	5.0	06/20/15 06:35	
Trichloroethene	ug/L	ND	5.0	06/20/15 06:35	
1,2-Dichloroethane-d4 (S)	%	99	70-130	06/20/15 06:35	
4-Bromofluorobenzene (S)	%	76	70-130	06/20/15 06:35	
Toluene-d8 (S)	%	93	70-130	06/20/15 06:35	

LABORATORY CONTROL SAMPLE: 1490108

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,2,2-Tetrachloroethane	ug/L	50	47.1	94	79-124	
1,1-Dichloroethane	ug/L	50	48.6	97	73-126	
1,2-Dichloroethane	ug/L	50	40.7	81	67-128	
1,3-Dichloropropane	ug/L	50	48.9	98	76-131	
Bromomethane	ug/L	50	44.5	89	40-160	
Chloromethane	ug/L	50	29.9	60	44-146	
Dibromochloromethane	ug/L	50	44.5	89	78-125	
Tetrachloroethene	ug/L	50	49.7	99	78-122	
trans-1,2-Dichloroethene	ug/L	50	51.2	102	71-127	
Trichloroethene	ug/L	50	48.0	96	78-122	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			90	70-130	
Toluene-d8 (S)	%			93	70-130	

MATRIX SPIKE SAMPLE: 1490109

Parameter	Units	92254288017 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.0	95	70-130	
1,1-Dichloroethane	ug/L	ND	20	21.5	107	70-130	
1,2-Dichloroethane	ug/L	ND	20	17.2	86	70-130	
1,3-Dichloropropane	ug/L	ND	20	20.0	100	70-130	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

MATRIX SPIKE SAMPLE: 1490109

Parameter	Units	92254288017 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromomethane	ug/L	ND	20	25.1	124	70-130	
Chloromethane	ug/L	ND	20	14.5	72	70-130	
Dibromochloromethane	ug/L	ND	20	17.5	88	70-130	
Tetrachloroethene	ug/L	14.5	20	39.6	125	70-130	
trans-1,2-Dichloroethene	ug/L	ND	20	22.1	111	70-130	
Trichloroethene	ug/L	ND	20	24.4	112	70-142	
1,2-Dichloroethane-d4 (S)	%				96	70-130	
4-Bromofluorobenzene (S)	%				82	70-130	
Toluene-d8 (S)	%				96	70-130	

SAMPLE DUPLICATE: 1490110

Parameter	Units	92254288018 Result	Dup Result	RPD	Qualifiers
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		
1,1-Dichloroethane	ug/L	ND	ND		
1,2-Dichloroethane	ug/L	ND	ND		
1,3-Dichloropropane	ug/L	ND	ND		
Bromomethane	ug/L	ND	ND		
Chloromethane	ug/L	ND	ND		
Dibromochloromethane	ug/L	ND	ND		
Tetrachloroethene	ug/L	ND	ND		
trans-1,2-Dichloroethene	ug/L	ND	ND		
Trichloroethene	ug/L	ND	ND		
1,2-Dichloroethane-d4 (S)	%	104	109	5	
4-Bromofluorobenzene (S)	%	74	72	2	
Toluene-d8 (S)	%	96	97	1	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

QC Batch: OEXT/35828
QC Batch Method: EPA 625
Analysis Method: EPA 625
Analysis Description: 625 MSS
Associated Lab Samples: 92254133001

METHOD BLANK: 1487167
Matrix: Water
Associated Lab Samples: 92254133001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	06/20/15 00:50	
2,4,6-Trichlorophenol	ug/L	ND	10.0	06/20/15 00:50	
2,4-Dichlorophenol	ug/L	ND	5.0	06/20/15 00:50	
2,4-Dimethylphenol	ug/L	ND	10.0	06/20/15 00:50	
2,4-Dinitrophenol	ug/L	ND	50.0	06/20/15 00:50	
2,4-Dinitrotoluene	ug/L	ND	5.0	06/20/15 00:50	
2,6-Dinitrotoluene	ug/L	ND	5.0	06/20/15 00:50	
2-Chloronaphthalene	ug/L	ND	5.0	06/20/15 00:50	
2-Chlorophenol	ug/L	ND	5.0	06/20/15 00:50	
2-Nitrophenol	ug/L	ND	5.0	06/20/15 00:50	
3,3'-Dichlorobenzidine	ug/L	ND	25.0	06/20/15 00:50	
4,6-Dinitro-2-methylphenol	ug/L	ND	20.0	06/20/15 00:50	
4-Bromophenylphenyl ether	ug/L	ND	5.0	06/20/15 00:50	
4-Chloro-3-methylphenol	ug/L	ND	5.0	06/20/15 00:50	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	06/20/15 00:50	
4-Nitrophenol	ug/L	ND	50.0	06/20/15 00:50	
Acenaphthene	ug/L	ND	5.0	06/20/15 00:50	
Acenaphthylene	ug/L	ND	5.0	06/20/15 00:50	
Anthracene	ug/L	ND	5.0	06/20/15 00:50	
Benzo(a)anthracene	ug/L	ND	5.0	06/20/15 00:50	
Benzo(a)pyrene	ug/L	ND	5.0	06/20/15 00:50	
Benzo(b)fluoranthene	ug/L	ND	5.0	06/20/15 00:50	
Benzo(g,h,i)perylene	ug/L	ND	5.0	06/20/15 00:50	
Benzo(k)fluoranthene	ug/L	ND	5.0	06/20/15 00:50	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	06/20/15 00:50	
bis(2-Chloroethyl) ether	ug/L	ND	5.0	06/20/15 00:50	
bis(2-Chloroisopropyl) ether	ug/L	ND	5.0	06/20/15 00:50	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	06/20/15 00:50	
Butylbenzylphthalate	ug/L	ND	5.0	06/20/15 00:50	
Chrysene	ug/L	ND	5.0	06/20/15 00:50	
Di-n-butylphthalate	ug/L	ND	5.0	06/20/15 00:50	
Di-n-octylphthalate	ug/L	ND	5.0	06/20/15 00:50	
Dibenz(a,h)anthracene	ug/L	ND	5.0	06/20/15 00:50	
Diethylphthalate	ug/L	ND	5.0	06/20/15 00:50	
Dimethylphthalate	ug/L	ND	5.0	06/20/15 00:50	
Fluoranthene	ug/L	ND	5.0	06/20/15 00:50	
Fluorene	ug/L	ND	5.0	06/20/15 00:50	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	06/20/15 00:50	
Hexachlorobenzene	ug/L	ND	5.0	06/20/15 00:50	
Hexachlorocyclopentadiene	ug/L	ND	10.0	06/20/15 00:50	
Hexachloroethane	ug/L	ND	5.0	06/20/15 00:50	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

METHOD BLANK: 1487167 Matrix: Water
Associated Lab Samples: 92254133001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	06/20/15 00:50	
Isophorone	ug/L	ND	10.0	06/20/15 00:50	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	06/20/15 00:50	
N-Nitrosodimethylamine	ug/L	ND	5.0	06/20/15 00:50	
N-Nitrosodiphenylamine	ug/L	ND	10.0	06/20/15 00:50	
Naphthalene	ug/L	ND	5.0	06/20/15 00:50	
Nitrobenzene	ug/L	ND	5.0	06/20/15 00:50	
Pentachlorophenol	ug/L	ND	10.0	06/20/15 00:50	
Phenanthrene	ug/L	ND	5.0	06/20/15 00:50	
Phenol	ug/L	ND	5.0	06/20/15 00:50	
Pyrene	ug/L	ND	5.0	06/20/15 00:50	
2,4,6-Tribromophenol (S)	%	72	10-137	06/20/15 00:50	
2-Fluorobiphenyl (S)	%	67	15-120	06/20/15 00:50	
2-Fluorophenol (S)	%	39	10-120	06/20/15 00:50	
Nitrobenzene-d5 (S)	%	84	10-120	06/20/15 00:50	
Phenol-d6 (S)	%	26	10-120	06/20/15 00:50	
Terphenyl-d14 (S)	%	94	11-131	06/20/15 00:50	

LABORATORY CONTROL SAMPLE: 1487168

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	33.8	68	44-142	
2,4,6-Trichlorophenol	ug/L	50	37.9	76	37-144	
2,4-Dichlorophenol	ug/L	50	36.3	73	1-191	
2,4-Dimethylphenol	ug/L	50	28.7	57	32-119	
2,4-Dinitrophenol	ug/L	250	125	50	1-181	
2,4-Dinitrotoluene	ug/L	50	41.1	82	39-139	
2,6-Dinitrotoluene	ug/L	50	40.4	81	50-158	
2-Chloronaphthalene	ug/L	50	36.2	72	60-118	
2-Chlorophenol	ug/L	50	32.0	64	23-134	
2-Nitrophenol	ug/L	50	37.2	74	29-182	
3,3'-Dichlorobenzidine	ug/L	100	74.5	74	1-262	
4,6-Dinitro-2-methylphenol	ug/L	100	74.1	74	1-181	
4-Bromophenylphenyl ether	ug/L	50	41.0	82	53-127	
4-Chloro-3-methylphenol	ug/L	100	67.9	68	22-147	
4-Chlorophenylphenyl ether	ug/L	50	38.7	77	25-158	
4-Nitrophenol	ug/L	250	69.6	28	1-132	
Acenaphthene	ug/L	50	36.4	73	47-145	
Acenaphthylene	ug/L	50	38.0	76	33-145	
Anthracene	ug/L	50	43.2	86	1-166	
Benzo(a)anthracene	ug/L	50	43.2	86	33-143	
Benzo(a)pyrene	ug/L	50	44.3	89	17-163	
Benzo(b)fluoranthene	ug/L	50	43.7	87	24-159	
Benzo(g,h,i)perylene	ug/L	50	46.9	94	1-219	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

LABORATORY CONTROL SAMPLE: 1487168

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(k)fluoranthene	ug/L	50	41.8	84	11-162	
bis(2-Chloroethoxy)methane	ug/L	50	38.3	77	33-184	
bis(2-Chloroethyl) ether	ug/L	50	37.0	74	12-158	
bis(2-Chloroisopropyl) ether	ug/L	50	35.9	72	36-166	
bis(2-Ethylhexyl)phthalate	ug/L	50	49.9	100	8-158	
Butylbenzylphthalate	ug/L	50	48.0	96	1-152	
Chrysene	ug/L	50	44.9	90	17-168	
Di-n-butylphthalate	ug/L	50	44.1	88	1-118	
Di-n-octylphthalate	ug/L	50	49.5	99	4-146	
Dibenz(a,h)anthracene	ug/L	50	46.0	92	1-227	
Diethylphthalate	ug/L	50	40.3	81	1-114	
Dimethylphthalate	ug/L	50	37.9	76	1-112	
Fluoranthene	ug/L	50	42.0	84	26-137	
Fluorene	ug/L	50	40.5	81	59-121	
Hexachloro-1,3-butadiene	ug/L	50	31.6	63	24-116	
Hexachlorobenzene	ug/L	50	41.0	82	1-152	
Hexachlorocyclopentadiene	ug/L	50	28.7	57	25-150	
Hexachloroethane	ug/L	50	31.3	63	40-113	
Indeno(1,2,3-cd)pyrene	ug/L	50	46.9	94	1-171	
Isophorone	ug/L	50	34.6	69	21-196	
N-Nitroso-di-n-propylamine	ug/L	50	35.5	71	1-230	
N-Nitrosodimethylamine	ug/L	50	21.1	42	25-150	
N-Nitrosodiphenylamine	ug/L	50	42.5	85	25-150	
Naphthalene	ug/L	50	34.4	69	21-133	
Nitrobenzene	ug/L	50	33.6	67	35-180	
Pentachlorophenol	ug/L	100	68.7	69	14-176	
Phenanthrene	ug/L	50	41.2	82	54-120	
Phenol	ug/L	50	15.6	31	5-112	
Pyrene	ug/L	50	45.2	90	52-115	
2,4,6-Tribromophenol (S)	%			87	10-137	
2-Fluorobiphenyl (S)	%			70	15-120	
2-Fluorophenol (S)	%			37	10-120	
Nitrobenzene-d5 (S)	%			70	10-120	
Phenol-d6 (S)	%			27	10-120	
Terphenyl-d14 (S)	%			96	11-131	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1487169 1487170

Parameter	Units	92253696004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,2,4-Trichlorobenzene	ug/L	ND	100	100	63.1	70.6	63	71	44-142	11	
2,4,6-Trichlorophenol	ug/L	ND	100	100	79.4	79.8	79	80	37-144	0	
2,4-Dichlorophenol	ug/L	ND	100	100	72.2	76.3	72	76	1-191	5	
2,4-Dimethylphenol	ug/L	ND	100	100	69.1	70.6	69	71	32-119	2	
2,4-Dinitrophenol	ug/L	ND	500	500	415	407	83	81	1-181	2	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1487169 1487170

Parameter	Units	92253696004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
2,4-Dinitrotoluene	ug/L	ND	100	100	86.6	85.5	87	86	39-139	1	
2,6-Dinitrotoluene	ug/L	ND	100	100	85.1	84.2	85	84	50-158	1	
2-Chloronaphthalene	ug/L	ND	100	100	73.8	76.5	74	77	60-118	4	
2-Chlorophenol	ug/L	ND	100	100	70.8	74.7	71	75	23-134	5	
2-Nitrophenol	ug/L	ND	100	100	73.8	79.1	74	79	29-182	7	
3,3'-Dichlorobenzidine	ug/L	ND	200	200	152	151	76	75	1-262	1	
4,6-Dinitro-2-methylphenol	ug/L	ND	200	200	174	169	87	85	1-181	3	
4-Bromophenylphenyl ether	ug/L	ND	100	100	84.6	85.0	85	85	53-127	0	
4-Chloro-3-methylphenol	ug/L	ND	200	200	158	155	79	77	22-147	2	
4-Chlorophenylphenyl ether	ug/L	ND	100	100	81.2	82.1	81	82	25-158	1	
4-Nitrophenol	ug/L	ND	500	500	249	256	50	51	1-132	3	
Acenaphthene	ug/L	ND	100	100	77.6	79.0	78	79	47-145	2	
Acenaphthylene	ug/L	ND	100	100	79.2	80.8	79	81	33-145	2	
Anthracene	ug/L	ND	100	100	89.5	87.9	89	88	1-166	2	
Benzo(a)anthracene	ug/L	ND	100	100	86.8	89.4	87	89	33-143	3	
Benzo(a)pyrene	ug/L	ND	100	100	91.1	90.7	91	91	17-163	0	
Benzo(b)fluoranthene	ug/L	ND	100	100	88.6	86.3	89	86	24-159	3	
Benzo(g,h,i)perylene	ug/L	ND	100	100	96.3	96.1	96	96	1-219	0	
Benzo(k)fluoranthene	ug/L	ND	100	100	85.9	89.2	86	89	11-162	4	
bis(2-Chloroethoxy)methane	ug/L	ND	100	100	76.3	80.4	76	80	33-184	5	
bis(2-Chloroethyl) ether	ug/L	ND	100	100	76.7	80.5	77	81	12-158	5	
bis(2-Chloroisopropyl) ether	ug/L	ND	100	100	78.3	80.8	78	81	36-166	3	
bis(2-Ethylhexyl)phthalate	ug/L	ND	100	100	99.9	133	100	133	8-158	28	
Butylbenzylphthalate	ug/L	ND	100	100	96.2	97.7	96	98	1-152	2	
Chrysene	ug/L	ND	100	100	91.6	93.6	92	94	17-168	2	
Di-n-butylphthalate	ug/L	ND	100	100	92.1	91.4	92	91	1-118	1	
Di-n-octylphthalate	ug/L	ND	100	100	102	107	102	107	4-146	5	
Dibenz(a,h)anthracene	ug/L	ND	100	100	96.6	95.1	97	95	1-227	2	
Diethylphthalate	ug/L	ND	100	100	85.5	82.8	85	83	1-114	3	
Dimethylphthalate	ug/L	ND	100	100	79.6	78.7	80	79	1-112	1	
Fluoranthene	ug/L	ND	100	100	85.6	85.9	86	86	26-137	0	
Fluorene	ug/L	ND	100	100	84.8	84.2	85	84	59-121	1	
Hexachloro-1,3-butadiene	ug/L	ND	100	100	57.4	65.1	57	65	24-116	12	
Hexachlorobenzene	ug/L	ND	100	100	84.4	83.1	84	83	1-152	1	
Hexachlorocyclopentadiene	ug/L	ND	100	100	52.8	62.1	53	62	25-150	16	
Hexachloroethane	ug/L	ND	100	100	61.7	66.8	62	67	40-113	8	
Indeno(1,2,3-cd)pyrene	ug/L	ND	100	100	98.6	94.2	99	94	1-171	4	
Isophorone	ug/L	ND	100	100	73.3	75.0	73	75	21-196	2	
N-Nitroso-di-n-propylamine	ug/L	ND	100	100	80.9	79.9	81	80	1-230	1	
N-Nitrosodimethylamine	ug/L	ND	100	100	55.3	58.5	55	59	25-150	6	
N-Nitrosodiphenylamine	ug/L	ND	100	100	86.9	83.6	87	84	25-150	4	
Naphthalene	ug/L	ND	100	100	66.7	70.7	67	71	21-133	6	
Nitrobenzene	ug/L	ND	100	100	64.4	70.2	64	70	35-180	9	
Pentachlorophenol	ug/L	ND	200	200	143	146	72	73	14-176	2	
Phenanthrene	ug/L	ND	100	100	84.9	83.6	85	84	54-120	2	
Phenol	ug/L	ND	100	100	48.5	51.1	48	51	5-112	5	

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QUALITY CONTROL DATA

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1487169 1487170

Parameter	Units	92253696004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Pyrene	ug/L	ND	100	100	86.1	87.2	86	87	52-115	1	
2,4,6-Tribromophenol (S)	%						86	84	10-137		
2-Fluorobiphenyl (S)	%						68	73	15-120		
2-Fluorophenol (S)	%						49	55	10-120		
Nitrobenzene-d5 (S)	%						68	73	10-120		
Phenol-d6 (S)	%						43	47	10-120		
Terphenyl-d14 (S)	%						89	92	11-131		

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

Sample: CONCORD PROCESS WATER **Lab ID: 92254133001** Collected: 06/10/15 16:15 Received: 06/11/15 09:38 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Upon receipt at the laboratory, 3 mls of nitric acid were added to the samples to meet the sample preservation requirement of pH <2 for radiological analyses.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**0.023 ± 0.451 (1.25) C:NA T:NA**	pCi/L	06/29/15 09:08	12587-46-1	
Gross Beta	EPA 900.0	**0.163 ± 2.58 (5.90) C:NA T:NA**	pCi/L	06/29/15 09:08	12587-47-2	
Radium-226	EPA 903.1	**0.661 ± 0.449 (0.487) C:NA T:88%**	pCi/L	06/30/15 10:03	13982-63-3	
Radium-228	EPA 904.0	**0.0240 ± 0.412 (0.902) C:62% T:61%**	pCi/L	07/01/15 18:20	15262-20-1	
Total Radium	Total Radium Calculation	**0.685 ± 0.861 (1.39)**	pCi/L	07/06/15 06:56	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

QC Batch: RADC/24917 | Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 | Analysis Description: 903.1 Radium-226
Associated Lab Samples: 92254133001

METHOD BLANK: 911968 | Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.130 ± 0.429 (0.900) C:NA T:92%	pCi/L	06/29/15 14:33	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL - RADIOCHEMISTRY

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

QC Batch: RADC/24947 | Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0 | Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 92254133001

METHOD BLANK: 913465 | Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.268 ± 0.648 (1.55) C:NA T:NA	pCi/L	06/29/15 08:58	
Gross Beta	0.360 ± 0.799 (1.83) C:NA T:NA	pCi/L	06/29/15 08:58	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

QC Batch: RADC/24970 | Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 | Analysis Description: 904.0 Radium 228
Associated Lab Samples: 92254133001

METHOD BLANK: 915184 | Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.797 ± 0.486 (0.896) C:68% T:77%	pCi/L	07/01/15 18:18	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte
PASI-PA	Pace Analytical Services - Greensburg

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CONCORD PROCESS POND
Pace Project No.: 92254133

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92254133001	CONCORD PROCESS WATER	EPA 625	OEXT/35828	EPA 625	MSSV/10829
92254133001	CONCORD PROCESS WATER	EPA 8260	MSV/32233		
92254133001	CONCORD PROCESS WATER	EPA 900.0	RADC/24947		
92254133001	CONCORD PROCESS WATER	EPA 903.1	RADC/24917		
92254133001	CONCORD PROCESS WATER	EPA 904.0	RADC/24970		
92254133001	CONCORD PROCESS WATER	Total Radium Calculation	RADC/25043		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Company: Iluka Resources Inc
Address: 12472 St. John Church Rd
Stony Creek, VA. 23882
Email To: Kevin.rideout@iluka.com
Phone: 434-348-4316 Fax:
Requested Due Date/TAT:

Section B
Required Project Information:

Report To: Kevin.rideout@iluka.com
Copy To:
Purchase Order No.: 4500363877
Project Name:
Project Number:

Section C
Invoice Information:

Attention: Dawn Hall
Company Name: ←
Address: ←
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

Page: of
1807248

REGULATORY AGENCY
☑ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Concord VA.

Section D
Required Client Information

Matrix Codes
MATRIX / CODE
Drinking Water DW
Water WT
Waste Water WW
Product P
Soil/Solid SL
Oil OL
Wipe WP
Air AR
Tissue TS
Other OT

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Concord Process Pond			6/9/16	13:15	6/10/16	16:15	16.5	10									See Attachment			97254133
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	James W Barbour / Iluka	6/11/15	08:00	Preston B. Haville	6-11-15	8:00				
	Preston B. Haville	6-11-15	9:33	Rachel Burrus	6-11-15	9:38	4.7			

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: JAMES W BARBOUR
SIGNATURE of SAMPLER: James W Barbour DATE Signed (MM/DD/YY): 6/10/16

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Radioactivity

Total Alpha
Total Beta
Total Radium
Total Radium 226

Pittsburgh 3-4 1L's

625

Others

Benzidine
1,2 Dichlorobenzene
1,3 Di-chlorobenzene
1,4 Dichlorobenzene
1,2 Diphenylhydrazine

625 PL

Sulfite → BP3U (AVL)
2,3,7,8 Tetra chlorodibenzene-P-Dioxin – TCDD (1 L amber) UL

Bis(chloromethyl)ether
Chlorodibromomethane
Dichlorobromomethane
1,2 dichloroethome
1,1 dichloroethyene
1,3 dichloropropylene
Methyl Bromide
1,1,2,2- tetrachloroethane
Tetrachleroethylene
1,2 trans Dichloroethylene
trichloroethane – 8260 (vials)

PRINT Name of SAMPLER: James W Barbour
SIGNATURE of SAMPLER:
DATE Signed

* 625 = 2 (1L's)
* Sulfite = BP3U (AVL)
PL * TCDD = 1 L amb (UL)
* 8260's = 3 DG9H (HVL)

Pace Analytical® www.pacelabs.com	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: May 15, 2015 Page 1 of 2*
	Document No.: F-MEC-CS-009-Rev.00	Issuing Authorities: Pace CAR Quality Office

* Page 2 of 2 is for Internal Use Only

Client Name: Iluka

Courier (Circle): Fed Ex UPS USPS (Client) Commercial Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other_____

Thermometer Used: (Circle) RMD001 RMD002 Other:_____ **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor: Add / Subtract _____ C

Corrected Cooler Temp.: 4.7 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6-11-15 RSB

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WW		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: Date:

SRF Review: JKP Date: 6/12/15

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

Place label here

OR

Handwrite project number (if no label available)

Pace Analytical www.pacelabs.com	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: May 15, 2015 Page 2 of 2
	Document No.: F-MEC-CS-012-rev.00	Issuing Authorities: Pace CAR Quality Office

Sample Bottle Codes

Item#	BP4U	BP3U	BP2U	BP1U	BP3S	BP3N	BP3Z	BP3C	WGFU	AG1U	AG1H	AG2U	AG1S	AG3S	AG3A	DG9H	VG9T	VG9U	DG9P	VOAK(6vials per kit)	V/GK(3vials per kit)	SP5T	SP2T	Cubitainer	
1		1								6						3									

Client Sample ID(s)	Sample Discrepancy

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation Adjusted	Time Preservation Adjusted	Amount of Preservative added	Lot# of Preservative

Bottle Code Key

125 ml Plastic Unp: BP4U
250 ml Plastic Unp: BP3U
500 ml Plastic Unp: BP2U
1 Liter Plastic Unp: BP1U
250 ml Plastic H2SO4: BP3S
250 ml Plastic HNO3: BP3N
250 ml Plastic ZN Acetate: BP3Z
250 ml Plastic NaOH: BP3C
Wide mouthed glass jar unp: WGFU

1 Liter Amber Unp: AG1U
1 Liter Amber HCl: AG1H
500 ml Amber Unp: AG2U
1 Liter Amber H2SO4: AG1S
250 ml Amber H2SO4: AG3S
250 ml Amber NH4CL: AG3A
40 ml VOA HCl: DG9H
40 ml VOA Na2S2O3: VG9T
40 ml VOA Unp: VG9U

40 ml VOA H2SO4: DG9P
5035 Kit: VOAK
VPH / Gas Kit : V/GK
125 ml Sterile Plastic: SP5T
250 ml Sterile Plastic: SP2T

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92254133 **Workorder Name:** CONCORD PROCESS POND **Owner Received Date:** 6/11/2015 **Results Requested By:** 6/25/2015

Report To	Subcontract To
Terri Page Pace Analytical Services, Inc. 9800 Kincey Ave., Suite 100 Huntersville, NC 28078 Phone (704)875-9092 Fax (704)875-9091	Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						Asbestos											LAB USE ONLY
1	CONCORD PROCESS WATER	PS	6/10/2015 16:15	92254133001	Water	1						X											
2																							
3																							
4																							
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2				
3				

Comments

Cooler Temperature on Receipt °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical®
www.pacelabs.com

Ship To:
Pace Analytical Ormond Beach
8 East Tower Circle
Ormond Beach, FL 32174
Phone (386)672-5668

INTER_LABORATORY WORK ORDER # 92254133
(To be completed by sending lab)

Sending Project No:	92254133
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	06/12/15
REQUESTED COMPLETION DATE:	**6/25/2015**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Terri Page
Receiving Region	IR35-Ormond Beach	External Client	ILUKA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of Containers	Preservative	Quantity of Samples	Unit Price	Amount
Sulfate	BP3U		Unpreserved	1	$25.50	$25.50
					TOTAL	$25.50

Special Requirements: _____

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
* Custom Revenue Allocation	TOTAL	$0.00	$0.00	$0.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Chain of Custody Included: ☐ Yes ☐ No Return Samples to Sending Region: ☐ Yes ☐ No

Matrix: ☐ Soil ☐ Water ☐ Air ☐ Other (identify) _____

CONFIRMATION OF WORK COMPLETED

Date Completed: _____ Receiving Project Manager: _____

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Chain of Custody

Pace Analytical®
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Workorder: 92254133 **Workorder Name:** CONCORD PROCESS POND **Results Requested** 6/25/2015

Report / Invoice To	Subcontract To
Terri Page Pace Analytical Eden 205 East Meadow Road Suite A Eden, NC 27288 Phone (336)623-8921 Email: terri.page@pacelabs.com	UL P.O. ED560792

Requested Analysis: X TCDD

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis	LAB USE ONLY
1	CONCORD PROCESS WATER	6/10/2015 16:15	92254133001	Water		X TCDD	
2							
3							
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1					
2					
3					

Cooler Temperature on Receipt °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92254133 **Workorder Name:** CONCORD PROCESS POND **Owner Received Date:** 6/11/2015 **Results Requested By:** 6/25/2015

Report To

Terri Page
Pace Analytical Services, Inc.
9800 Kincey Ave., Suite 100
Huntersville, NC 28078
Phone (704)875-9092
Fax (704)875-9091

Subcontract To

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2, 3, & 4
Greensburg, PA 15601
Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: Total Alpha	Tot. Beta	Tot. Radium	Tot. Radium 226	LAB USE ONLY
1	CONCORD PROCESS WATER	PS	6/10/2015 16:15	92254133001	Water	1	X	X	X	X	
2											
3											
4											
5											

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2				
3				

Comments

Cooler Temperature on Receipt _____ °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

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Ship To:
Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2, 3, & 4
Greensburg, PA 15601
Phone (724)850-5600

INTER_LABORATORY WORK ORDER # 92254133
(To be completed by sending lab)

Sending Project No:	92254133
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	06/12/15
REQUESTED COMPLETION DATE:	**6/25/2015**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Terri Page
Receiving Region	IR30-Pittsburgh	External Client	ILUKA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight Cert. Needed _____

WORK REQUESTED						
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Unit Price	Amount
Radiological	AG1U		Unpreserved	1	$200.00	$200.00
					TOTAL	$200.00

Special Requirements: _____

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
Waltz Mill Radiochemistry	38	$200.00	$160.00	$40.00
	TOTAL	$200.00	$160.00	$40.00

* Custom Revenue Allocation

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Chain of Custody Included: ☐ Yes ☐ No Return Samples to Sending Region: ☐ Yes ☐ No

Matrix: ☐ Soil ☐ Water ☐ Air ☐ Other (identify) _____

CONFIRMATION OF WORK COMPLETED

Date Completed: _____ Receiving Project Manager: _____

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

June 12, 2015

Kevin Rideout

,

RE: Project: CONCORD PROCESS POND
Pace Project No.: 92253726

Dear Kevin Rideout:
Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Terri Page

Terri Page
terri.page@pacelabs.com
Project Manager

Enclosures

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: CONCORD PROCESS POND
Pace Project No.: 92253726

Eden Certification IDs
205 East Meadow Road Suite A, Eden, NC 27288
North Carolina Drinking Water Certification #: 37738
North Carolina Wastewater Certification #: 633
Virginia/VELAP Certification #: 460025

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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: CONCORD PROCESS POND
Pace Project No.: 92253726

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92253726001	CONCORD PROCESS POND	SM 9223 COLILERT MPN	DWJ	2	PASI-E
92253726002	CONCORD PROCESS POND	Enterolert	DWJ	1	PASI-E

REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: CONCORD PROCESS POND
Pace Project No.: 92253726

Sample: CONCORD PROCESS POND **Lab ID: 92253726001** Collected: 06/10/15 10:34 Received: 06/10/15 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO E.coli (Quantitation)	Analytical Method: SM 9223 COLILERT MPN Preparation Method: SM 9223 COLILERT MPN							
Total Coliforms	**365**	MPN/100mL	1.0	1	06/10/15 17:25	06/11/15 17:40		
E.coli	ND	MPN/100mL	1.0	1	06/10/15 17:25	06/11/15 17:40		

Sample: CONCORD PROCESS POND **Lab ID: 92253726002** Collected: 06/10/15 10:35 Received: 06/10/15 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Enterococci EDN	Analytical Method: Enterolert							
Enterococci	**1.0**	MPN/100mL	1.0	1		06/10/15 17:08		

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: CONCORD PROCESS POND
Pace Project No.: 92253726

QC Batch: EDEN/18865
QC Batch Method: Enterolert
Analysis Method: Enterolert
Analysis Description: Enterococci - EDN
Associated Lab Samples: 92253726002

METHOD BLANK: 1481497
Matrix: Water
Associated Lab Samples: 92253726002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Enterococci	MPN/100mL	ND	1.0	06/10/15 17:08	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: CONCORD PROCESS POND
Pace Project No.: 92253726

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-E Pace Analytical Services - Eden

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CONCORD PROCESS POND
Pace Project No.: 92253726

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92253726001	**CONCORD PROCESS POND**	SM 9223 COLILERT MPN	EDEN/18861	SM 9223 COLILERT MPN	EDEN/18863
92253726002	**CONCORD PROCESS POND**	Enterolert	EDEN/18865		

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Pace Analytical www.pacelabs.com	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: May 15, 2015 Page 1 of 2*
	Document No.: F-EDN-CS-003-rev.11	Issuing Authorities: Pace Eden Quality Office

*Page 2 of 2 is for Internal Use Only

Client Name: ILuka

Courier (circle): Fed Ex UPS USPS Client Commercial Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other_____

Thermometer Used: IR Gun ED007 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Temp Correction Factor: Add / Subtract -1 C

Corrected Cooler Temp.: 4.2 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and initials of person examining contents / preservation check: 6/10/15 dp

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6. E-Coli Enterococci
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WW G		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF / SRF Review: [illegible] **Date:** 6/10/15 6/11/15

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

Place label here

OR

Handwrite project number (if no label available)

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:
Company: Iluka Resources Inc
Address: 12472 St. John Church rd
Stony Creek VA. 23882
Email To: kevin.rideout@iluka.com
Phone: 434-348-4316 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:
Report To: Kevin.rideout@iluka.com
Copy To:
Purchase Order No.: 4500363877
Project Name:
Project Number:

Section C Invoice Information:
Attention: Dawn Hall
Company Name: Iluka Resources Inc
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

Page: of
1807993

REGULATORY AGENCY
☑ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Concord VA

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): E Coli	Enterococci	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	E Coli Concord Process Pond	WW	G			6/10/16	10:34	22.1	1									✓			92253726
2	Enterococci Concord Process pond	WW	G			6/10/16	10:35	22.1	1										✓		
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	James W Barbour (Iluka)	6-10-15	10:02	Preston B. Hamilly	6-10-15	11:00				
	Preston B. Hamilly	6-10-15	11:56	Rachel Dunn	6-10-15	1200	9.2			
				Blottem Gibson	6/10	1620	4.2	Y	N	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: James W Barbour
SIGNATURE of SAMPLER: James W Barbour DATE Signed (MM/DD/YY): 6/10/16

WO#: 92253726
92253726

payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

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Section A Required Client Information:

Company: Iluka Resources Inc
Address: 12472 St. John Church rd
Stony Creek VA. 23882
Email To: Kevin.rideout@iluka.com
Phone: 434-348-4216 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Kevin.rideout@iluka.com
Copy To:
Purchase Order No.: 4500363877
Project Name:
Project Number:

Section C Invoice Information:

Attention: Dawn Hall
Company Name: Iluka Resources Inc
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☑ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Concord VA

Section D Required Client Information

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ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): E Coli	Enterococci	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	E coli Concord Process Pond	WW	G			6/10/16	10:34	22.1	1									✓			
2	Enterococci Concord Process pond	WW	G			6/10/16	10:35	22.1	1										✓		
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	James W Barbour (Iluka)	6-10-15	10:02	Preston B. Hamilly	6-10-15	11:00				
	Preston B. Hamilly	6-10-15	11:58	Rachel Burress	6-10-15	1200	9.2			

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: James W Barbour

SIGNATURE of SAMPLER: James W Barbour DATE Signed (MM/DD/YY): 6/10/16

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

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Project Name:
Project Number:

Section C Invoice Information:

Attention: Dawn Hall
Company Name: Iluka Resources Inc
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☑ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Concord VA

Section D Required Client Information

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): E coli	Analysis Test (Y/N): Enterococci	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	E coli Concord Process Pond	WW	G			6/10/16	10:34	22.1	1									✓			
2	Enterococci Concord Process Pond	WW	G			6/10/16	10:35	22.1	1										✓		
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	James W. Barbour (Iluka)	6-10-15	10:02	Preston B. Haville	6-10-15	11:00				
	Preston B. Haville	6-10-15	11:58	Rachel Dunnus	6-10-15	1200	9.2			

2

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JAMES W. BARBOUR

SIGNATURE of SAMPLER: James W Barbour

DATE Signed (MM/DD/YY): 6/10/16

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515

Friday, August 21, 2015
Golder Associates (GO005)
Attn: Joe Church
2108 W. Laburnum Ave., Suite 200
Richmond, VA 23227

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: Iluka- Concord VPDES Permit Appl
ENCO Workorder(s): C510446

Dear Joe Church,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Monday, August 17, 2015.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Stephanie Franz
Project Manager
Enclosure(s)

www.encolabs.com

PROJECT NARRATIVE

Date: 21 August 2015
Client: Golder Associates (GO005)
Project: Iluka- Concord VPDES Permit Appl
Lab ID: C510446

Overview

Environmental Conservation Laboratories, Inc. (ENCO) analyzed all submitted samples in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling by ENCO are discussed in the QC Remarks section below.

Quality Control Samples

The spike recovery of Benzidine was outside of control limits for the 625 MS and MSD samples. The QC batch was approved based on acceptable LCS recovery of this analyte.

Quality Control Remarks

No Comments

Other Comments

Due to an error by the shipping vendor, the sample arrived outside of the EPA's recommended temperature range (2-6 degrees Centigrade). The client was contacted, and ENCO was instructed to process the samples as received. The samples were not checked for residual chlorine, as it is not required.

The analytical data presented in this report are consistent with the methods as referenced in the analytical report. Any exceptions or deviations are noted in the QC remarks section of this narrative or in the Flags/Notes and Definitions section of the report.

Released By:
Environmental Conservation Laboratories, Inc.

Stephanie Franz
Project Manager

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: Concord Process Pond **Lab ID:** C510446-01 **Sampled:** 08/14/15 11:45 **Received:** 08/17/15 08:37

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 608	08/21/15	09/27/15	08/18/15	09:37	08/20/15 20:19
EPA 624	08/28/15		08/18/15	16:28	08/21/15 15:23
EPA 625	08/21/15	09/26/15	08/17/15	13:06	08/18/15 15:55

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

No positive results detected.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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ANALYTICAL RESULTS

Description: Concord Process Pond
Matrix: Waste Water
Project: Iluka- Concord VPDES Permit Appl

Lab Sample ID: C510446-01
Sampled: 08/14/15 11:45
Sampled By: Joe Church

Received: 08/17/15 08:37
Work Order: C510446

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [VELAP 460146]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
cis-1,3-Dichloropropene [10061-01-5]^	0.20	U	ug/L	1	0.20	1.0	5H20029	EPA 624	08/21/15 15:23	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	0.15	U	ug/L	1	0.15	1.0	5H20029	EPA 624	08/21/15 15:23	MSZ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	*Notes*
4-Bromofluorobenzene	*53*	*1*	*50.0*	*105 %*	*53-136*	*5H20029*	*EPA 624*	*08/21/15 15:23*	*MSZ*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*59-134*	*5H20029*	*EPA 624*	*08/21/15 15:23*	*MSZ*	

Semivolatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [VELAP 460146]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Benzidine [92-87-5]^	1.6	U	ug/L	1	1.6	10	5H17007	EPA 625	08/18/15 15:55	DFM	
DPH (as Azobenzene) [103-33-3]	1.4	U	ug/L	1	1.4	10	5H17007	EPA 625	08/18/15 15:55	DFM	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	*Notes*
2,4,6-Tribromophenol	*77*	*1*	*100*	*77 %*	*18-157*	*5H17007*	*EPA 625*	*08/18/15 15:55*	*DFM*	
2-Fluorobiphenyl	*39*	*1*	*50.0*	*77 %*	*15-139*	*5H17007*	*EPA 625*	*08/18/15 15:55*	*DFM*	
2-Fluorophenol	*55*	*1*	*100*	*55 %*	*10-104*	*5H17007*	*EPA 625*	*08/18/15 15:55*	*DFM*	
Nitrobenzene-d5	*39*	*1*	*50.0*	*78 %*	*16-140*	*5H17007*	*EPA 625*	*08/18/15 15:55*	*DFM*	
Phenol-d5	*49*	*1*	*100*	*49 %*	*10-83*	*5H17007*	*EPA 625*	*08/18/15 15:55*	*DFM*	
Terphenyl-d14	*43*	*1*	*50.0*	*87 %*	*23-164*	*5H17007*	*EPA 625*	*08/18/15 15:55*	*DFM*	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [VELAP 460146]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Endosulfan I [959-98-8]^	0.04	U	ug/L	1	0.04	0.05	5H18005	EPA 608	08/20/15 20:19	MWC	
Endosulfan II [33213-65-9]^	0.04	U	ug/L	1	0.04	0.05	5H18005	EPA 608	08/20/15 20:19	MWC	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	*Notes*
2,4,5,6-TCMX	*0.94*	*1*	*1.00*	*94 %*	*44-134*	*5H18005*	*EPA 608*	*08/20/15 20:19*	*MWC*	
Decachlorobiphenyl	*0.82*	*1*	*1.00*	*82 %*	*37-149*	*5H18005*	*EPA 608*	*08/20/15 20:19*	*MWC*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5H20029 - EPA 5030B_MS

Blank (5H20029-BLK1) Prepared: 08/20/2015 15:42 Analyzed: 08/21/2015 12:27

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,3-Dichloropropene	0.20	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.15	U	1.0	ug/L							
4-Bromofluorobenzene	*54*			*ug/L*	*50.0*		*109*	*53-136*			
Toluene-d8	*52*			*ug/L*	*50.0*		*103*	*59-134*			

LCS (5H20029-BS1) Prepared: 08/20/2015 15:42 Analyzed: 08/21/2015 15:52

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,3-Dichloropropene	19		1.0	ug/L	20.0		95	10-227			
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0		104	17-183			
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*111*	*53-136*			
Toluene-d8	*53*			*ug/L*	*50.0*		*105*	*59-134*			

Matrix Spike (5H20029-MS1) Prepared: 08/20/2015 15:42 Analyzed: 08/21/2015 13:25

Source: C510465-08

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,3-Dichloropropene	25		1.0	ug/L	20.0	0.20 U	127	10-227			
trans-1,3-Dichloropropene	27		1.0	ug/L	20.0	0.15 U	136	17-183			
4-Bromofluorobenzene	*56*			*ug/L*	*50.0*		*112*	*53-136*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*59-134*			

Matrix Spike Dup (5H20029-MSD1) Prepared: 08/20/2015 15:42 Analyzed: 08/21/2015 13:55

Source: C510465-08

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,3-Dichloropropene	25		1.0	ug/L	20.0	0.20 U	123	10-227	4	25	
trans-1,3-Dichloropropene	26		1.0	ug/L	20.0	0.15 U	132	17-183	3	25	
4-Bromofluorobenzene	*56*			*ug/L*	*50.0*		*111*	*53-136*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*59-134*			

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 5H17007 - EPA 3510C_MS

Blank (5H17007-BLK1) Prepared: 08/17/2015 10:06 Analyzed: 08/18/2015 13:20

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Benzidine	1.6	U	10	ug/L							
DPH (as Azobenzene)	1.4	U	10	ug/L							
2,4,6-Tribromophenol	*79*			*ug/L*	*100*		*79*	*18-157*			
2-Fluorobiphenyl	*36*			*ug/L*	*50.0*		*72*	*15-139*			
2-Fluorophenol	*52*			*ug/L*	*100*		*52*	*10-104*			
Nitrobenzene-d5	*36*			*ug/L*	*50.0*		*72*	*16-140*			
Phenol-d5	*45*			*ug/L*	*100*		*45*	*10-83*			
Terphenyl-d14	*35*			*ug/L*	*50.0*		*70*	*23-164*			

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QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 5H17007 - EPA 3510C_MS - Continued

LCS (5H17007-BS1) Prepared: 08/17/2015 10:06 Analyzed: 08/18/2015 13:51

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Benzidine	14		10	ug/L	50.0		28	10-136			
DPH (as Azobenzene)	41		10	ug/L	50.0		81	69-108			
2,4,6-Tribromophenol	*80*			*ug/L*	*100*		*80*	*18-157*			
2-Fluorobiphenyl	*34*			*ug/L*	*50.0*		*68*	*15-139*			
2-Fluorophenol	*49*			*ug/L*	*100*		*49*	*10-104*			
Nitrobenzene-d5	*34*			*ug/L*	*50.0*		*67*	*16-140*			
Phenol-d5	*43*			*ug/L*	*100*		*43*	*10-83*			
Terphenyl-d14	*38*			*ug/L*	*50.0*		*76*	*23-164*			

Matrix Spike (5H17007-MS1) Prepared: 08/17/2015 10:06 Analyzed: 08/18/2015 14:22

Source: C510211-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Benzidine	1.6	U	10	ug/L	50.0	1.6 U		10-136			QM-07
DPH (as Azobenzene)	43		10	ug/L	50.0	1.4 U	85	69-108			
2,4,6-Tribromophenol	*81*			*ug/L*	*100*		*81*	*18-157*			
2-Fluorobiphenyl	*36*			*ug/L*	*50.0*		*72*	*15-139*			
2-Fluorophenol	*62*			*ug/L*	*100*		*62*	*10-104*			
Nitrobenzene-d5	*36*			*ug/L*	*50.0*		*72*	*16-140*			
Phenol-d5	*62*			*ug/L*	*100*		*62*	*10-83*			
Terphenyl-d14	*38*			*ug/L*	*50.0*		*77*	*23-164*			

Matrix Spike Dup (5H17007-MSD1) Prepared: 08/17/2015 10:06 Analyzed: 08/18/2015 14:53

Source: C510211-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Benzidine	1.6	U	10	ug/L	50.0	1.6 U		10-136		25	QM-07
DPH (as Azobenzene)	43		10	ug/L	50.0	1.4 U	86	69-108	1	25	
2,4,6-Tribromophenol	*87*			*ug/L*	*100*		*87*	*18-157*			
2-Fluorobiphenyl	*36*			*ug/L*	*50.0*		*72*	*15-139*			
2-Fluorophenol	*69*			*ug/L*	*100*		*69*	*10-104*			
Nitrobenzene-d5	*38*			*ug/L*	*50.0*		*76*	*16-140*			
Phenol-d5	*68*			*ug/L*	*100*		*68*	*10-83*			
Terphenyl-d14	*40*			*ug/L*	*50.0*		*81*	*23-164*			

Semivolatile Organic Compounds by GC - Quality Control

Batch 5H18005 - EPA 3510C

Blank (5H18005-BLK1) Prepared: 08/18/2015 09:37 Analyzed: 08/20/2015 18:05

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Endosulfan I	0.04	U	0.05	ug/L							
Endosulfan II	0.04	U	0.05	ug/L							
2,4,5,6-TCMX	*0.97*			*ug/L*	*1.00*		*97*	*44-134*			
Decachlorobiphenyl	*0.98*			*ug/L*	*1.00*		*98*	*37-149*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GC - Quality Control

Batch 5H18005 - EPA 3510C - Continued

LCS (5H18005-BS1) Prepared: 08/18/2015 09:37 Analyzed: 08/20/2015 18:19

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4,4'-DDT	1.2		0.05	ug/L	1.00		117	37-160			
Aldrin	0.96		0.05	ug/L	1.00		96	42-122			
Dieldrin	1.0		0.05	ug/L	1.00		100	36-146			
Endrin	1.1		0.05	ug/L	1.00		106	30-147			
gamma-BHC	0.97		0.05	ug/L	1.00		97	19-140			
Heptachlor	1.0		0.05	ug/L	1.00		103	45-122			
2,4,5,6-TCMX	*0.97*			*ug/L*	*1.00*		*97*	*44-134*			
Decachlorobiphenyl	*0.97*			*ug/L*	*1.00*		*97*	*37-149*			

Matrix Spike (5H18005-MS1) Prepared: 08/18/2015 09:37 Analyzed: 08/20/2015 18:32

Source: C510211-14

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4,4'-DDT	1.3		0.05	ug/L	1.00	0.05 U	131	35-160			
Aldrin	1.1		0.05	ug/L	1.00	0.04 U	106	42-122			
Dieldrin	1.1		0.05	ug/L	1.00	0.04 U	111	36-146			
Endrin	1.2		0.05	ug/L	1.00	0.04 U	118	30-147			
gamma-BHC	1.1		0.05	ug/L	1.00	0.03 U	106	19-140			
Heptachlor	1.1		0.05	ug/L	1.00	0.03 U	112	45-122			
2,4,5,6-TCMX	*1.0*			*ug/L*	*1.00*		*103*	*44-134*			
Decachlorobiphenyl	*1.1*			*ug/L*	*1.00*		*109*	*37-149*			

Matrix Spike Dup (5H18005-MSD1) Prepared: 08/18/2015 09:37 Analyzed: 08/20/2015 18:45

Source: C510211-14

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4,4'-DDT	1.2		0.05	ug/L	1.00	0.05 U	122	35-160	7	25	
Aldrin	1.0		0.05	ug/L	1.00	0.04 U	100	42-122	6	25	
Dieldrin	1.1		0.05	ug/L	1.00	0.04 U	106	36-146	5	25	
Endrin	1.1		0.05	ug/L	1.00	0.04 U	112	30-147	5	25	
gamma-BHC	1.0		0.05	ug/L	1.00	0.03 U	100	19-140	5	25	
Heptachlor	1.1		0.05	ug/L	1.00	0.03 U	107	45-122	5	32	
2,4,5,6-TCMX	*1.0*			*ug/L*	*1.00*		*101*	*44-134*			
Decachlorobiphenyl	*1.0*			*ug/L*	*1.00*		*104*	*37-149*			

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FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
P	Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

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102-A Woodwinds Industrial Ct.
Cary, NC 27511
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Page 1 of 1

Client Name: Golder Associates	Project Number: 043-676415
Address: 2108 West Laburnum Ave Suite 200	Project Name/Desc: Ilmka - Concord VPDES permit application
City/ST/Zip: Richmond VA 23227	PO # / Billing Info
Tel: 804-358-7900 Fax: 804-358-2900	Reporting Contact: Joe Chuck
Sampler(s) Name, Affiliation (Print): Joe Chuck	Billing Contact: Kathy Chapman
Sampler(s) Signature: Joe Chuck	Site Location / Time Zone: Sussex County

Requested Analyses: 1,3-Dichloropropene (method 624); 1,2-Diphenylhydrazine (as Azobenzene) method 625; Benzidine - method 625; a-Endosulfan (method 608); b-Endosulfan

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

___ Standard

✓ Expedited

Due 8/21/15

Lab Workorder: CS10446

Preservation (See Codes) (Combine as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	1,3-Dichloropropene (method 624)	1,2-Diphenylhydrazine (as Azobenzene) method 625	Benzidine - method 625	a-Endosulfan (method 608)	b-Endosulfan						Sample Comments
	Concord Process Pond	8/14/15	1145	G	WW	5	X	X	X	X	X						
						5	<-- Total # of Containers										

Sample Kit Prepared By	Date/Time	Relinquished By: Joe Chuck	Date/Time: 8/14/15 1630	Received By: [signature]	Date/Time: 8-17-15 0837
Comments/Special Reporting Requirements: Fed Ex: 8075 7316 5028		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: 24.2c		Condition Upon Receipt: ✓ Acceptable ___ Unacceptable	

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist