ATTACHMENT B– TECHNICAL SUPPORT DOCUMENT FOR THE EVALUATION OF AEROBIC BIOLOGICAL TREATMENT UNITS WITH MULTIPLE MIXING ZONES

11/98

Technical Support Document for Evaluation of Thoroughly Mixed Biological Treatment Units

I. Overview and Purpose

This document is intended to provide information to assist anyone who needs to determine whether a biological treatment unit meets the definition of an "enhanced biological treatment system or enhanced biological treatment process" for the purpose of using certain compliance demonstration provisions in 40 CFR part 63, subpart G. Potential users of this document include owners and operators of sources subject to 40 CFR part 63, subpart G as well as enforcement personnel evaluating whether a specific biological treatment process meets the criteria in the definition. It is therefore assumed that readers of this document are familiar with the requirements of subpart G for treatment of wastewater and consequently those requirements are not restated in this document. This information is intended for clarification purposes only, does not constitute final agency action, and cannot be relied upon to create any rights enforceable by any party.

The purpose of this document is to provide technical support and procedures to determine whether a biological treatment unit meets the criteria for being considered a "thoroughly mixed treatment unit" within the meaning of the enhanced biological treatment process definition in 40 CFR 63.111. The objectives of these evaluation procedures are to determine whether the entering wastewater and recycled biomass are quickly dispersed throughout the unit and whether the unit's design would avoid volatilization of the compounds of concern prior to efficient biodegradation. Several alternative approaches are presented for determining whether a biological treatment process is "thoroughly mixed." All of these procedures are considered to provide equally acceptable assessments and no one procedure is considered to take precedence over another. For example, tracer testing does not take precedence over a system design evaluation as described in this document. These evaluation procedures have been designed to allow, to the extent reasonable, the use of existing information and to minimize the need to develop new information to make the determination. It is recommended, however, that in cases where sufficient information is not available to make an unambiguous determination that readers should consider developing additional information to resolve the uncertainty.

II. Background

Subpart G provides two easier compliance demonstration options for activated sludge systems that meet the definition of an "enhanced biological treatment system or enhanced biological treatment process." First, §63.145(h)(1) provides an exemption from performance evaluation for an "enhanced biological treatment system or enhanced biological treatment process" that is used to control wastewater streams containing regulated compounds on list 1 in table 36 to subpart G. Second, if a system meets the definition of "enhanced biological treatment system or enhanced biological treatment process" and is used to treat wastewater containing compounds on list 1 and list 2, §63.145 (h)(2) (i) allows use of a simplified performance demonstration. The performance demonstration is considered to be easier because it may be limited to determining the first order biodegradation constant (K1) for the list 2 compounds. Section 63.145(h)(2)(i) allows the owner/operator to use the default K1s for enhanced biological treatment systems for the list 1 compounds that are provided in table 37 to subpart G.

Subpart G, in §63.111, defines "enhanced biological treatment system or enhanced biological treatment process" as:

> <u>Enhanced biological treatment system or enhanced biological treatment process</u> means an aerated, thoroughly mixed treatment unit(s) that contains biomass suspended in water followed by a clarifier that removes biomass from the treated water and recycles recovered biomass to the aeration unit. The mixed liquor volatile suspended solids (biomass) is greater than 1 kilogram per cubic meter throughout each aeration unit. The biomass is suspended and aerated in the water of the aeration unit(s) by either submerged air flow or mechanical agitation. A thoroughly mixed treatment unit is a unit that is designed and operated to approach or achieve uniform biomass distribution and organic compound concentration throughout the aeration unit by quickly dispersing the recycled biomass and the wastewater entering the unit.

The EPA's intent is that this definition reflect the modeling that was used, in part, as the basis for the decision (1) to exempt certain systems treating list 1 compounds from the requirement to determine the fraction biodegraded (Fbio) and (2) to allow the easier procedures for determining Fbio for systems meeting the definition but treating list 1 and 2 compounds. Important features of this definition are that biomass is recycled, the biomass approaches or achieves a state of being suspended uniformly throughout each aeration unit, the biomass concentration is not less than 1 kilogram/cubic meter, and that influent materials are rapidly dispersed throughout the unit. This last characteristic is one of the key design criteria for ensuring that the list 1 compounds are efficiently biodegraded in the biological treatment unit prior to the opportunity for significant volatilization to the atmosphere. Consequently, the criteria and procedures provided in this document for determining whether a biological treatment unit can be considered a "thoroughly mixed treatment unit" are based on evaluating the rate of mixing relative to the rate of stripping or volatilization.

III. Design Characteristics that Influence Mixing Time

This section describes the characteristics of units that are considered to contribute to good mixing in units approaching the continuous flow stirred tank reactor configuration resulting in optimum biodegradation as opposed to volatilization. Characteristics that are of concern for good mixing are also discussed in this section.

Biomass separation and agitation are two characteristics that require attention for the operation of a successful activated sludge system. The system should be designed or operated so that biomass separation occurs exterior to the aeration system (e.g., secondary clarifier with return of separated biomass to the aeration unit). In the design of the system, there are no zones that have no agitation (quiescent zones in the air emission models); however, real systems may as a practical matter, be found to have small insignificant stagnant zones. Even with such stagnant zones, there is enough mixing throughout the reactor to support suspension such that there is no significant accumulation of biomass on the bottom or sides of the aeration unit. With insufficient mixing, biomass can accumulate at the unit floor. Symptoms of this effect include biomass layers, low dissolved oxygen or anaerobic decay at the base of the floor in these zones, and less biomass generation in the system than is theoretically expected.

Baffles reduce mixing in the unit as a whole and the presence of internal baffles suggests deliberate control and restriction of mixing. Baffles can be intentionally included when designing a plug flow system; however, the absence of baffles does not necessarily indicate a well mixed system.

Thoroughly mixed units do not have a high length to width ratio. Back-mixing in biological treatment units depends on the length to width ratio, the dispersion characteristics, and the retention time in the reactor. Long units are more difficult to mix uniformly. Generally, a length to width ratio of four to one, or greater, is considered a high ratio. Thoroughly mixed systems would typically have a length to width ratio less than 4:1. Vivona (1983) states that plug flow sizing would be based on a length to width ratio of 4:1 to 12:1 .

Thoroughly mixed units are aerated substantially uniformly across the surface of the unit. Aeration that is greater near the inlet of the unit suggests a design for non-uniformity. Non-uniform mixing could cause a greater oxygen demand near the inlet. This would imply that the inlet loading is not distributed throughout the unit and significant volatilization may occur prior to efficient biodegradation.

Quiescent zones separating agitated zones may or may not be well-mixed . For example, surface units are well mixed and uniform within the agitation zone around each surface aerator, but the aeration unit as a whole may not be well mixed throughout the entire unit. Units designed so that the wastewater flows sequentially from one aeration unit to another may be considered plug flow. This flow in series may be determined by inspection or by tracer testing and observing the path of the tracer.

Examples of design features that may result in poor mixing or dispersion of the entering wastewater throughout the aeration unit are listed in Table 1. There were 2 main factors associated with the selection of the specifications in Table 1: (1) quick dispersion and thorough mixing and (2) volatilization prior to biodegradation. The two factors are interrelated in that quick dispersion and thorough mixing must occur prior to significant volatilization of the compounds of concern for the system to achieve the required destruction through biodegradation. Certain design characteristics may lead to problems with respect to these factors. Table 1 lists these factors.

IV. Procedures for Evaluating Mixing Performance

A. Overview of procedure

Figure 1 presents a logic flow diagram of the suggested approach for determining whether a unit meets the definition of "enhanced biological treatment system or enhanced biological treatment process." The determination consists of a four-step process that may be terminated at any point or continued through to conducting an evaluation of the mixing within the aeration unit. The process was designed this way to allow early elimination of any unit unlikely to be considered an "enhanced biological treatment system or enhanced biological treatment process."

The first step in any assessment should be to see if the unit is obviously ineligible because it does not meet criteria such as recycling of biomass or having a biomass concentration of greater than or equal to 1 kg/ m^3 MLVSS. If the unit does not meet these basic criteria, its performance would have to be evaluated using the procedures in appendix C to part 63.

The second step is to see if the unit has any of the characteristics listed in Table 1, which lists design characteristics that may result in a system that is not thoroughly mixed. If the answer to this question is yes, it is suggested that readers consider using the procedures in appendix C to part 63 and subdividing the unit into a series of zones that have uniform characteristics within each zone to determine performance instead of proceeding to the next step in the determination of mixing performance. If the reader wishes to continue with the determination of mixing performance, the reader should proceed to step four and follow one of the three procedures for determining mixing in the unit.

The third step is to refer to Table 2 to see if the unit has one of the design characteristics in each of the parameter specifications for reactor shape, depth, aerator type, aeration equipment location, and effluent outlet, number 1 and 2 or 3 of the mixing parameter specifications, and all of the inlet parameter specifications. Meeting the Table 2 design characteristics will result in a system that can be considered thoroughly mixed. If the system does meet these requirements then it is considered to meet the criteria of the definition and no further evaluation is necessary. It should be recognized that Table 2 lists design characteristics of a biological unit designed to minimize air emissions and that not all enhanced biological treatment systems will necessarily meet all of these design criteria. The EPA intends that Table 2 reflect design characteristics of only those units that are clearly thoroughly mixed. The fact that a biological treatment system does not meet all the design characteristics in Table 2 should not be interpreted as implying that the system is not thoroughly mixed as discussed in section II or that it will not achieve good biodegradation. It only means that it is necessary to proceed with the next step in the evaluation.

The fourth step in the evaluation process is to evaluate mixing performance using any one of the three procedures described in this document and complete the appropriate calculation forms for the procedure. The three procedures are design evaluation, tracer studies, and in–basin measurements. As previously stated, all of these procedures are considered to provide equally acceptable assessments and no one procedure is considered to take precedence over another. Selection of the procedure will depend on the availability of information, the relative ease of obtaining the necessary information, and/or personal preferences. The time to achieve complete mixing in an enhanced biological treatment system should be substantially less than both the time to air strip chlorobenzene from the system and the retention time of the waste in the system. The following sections B, C, and D describe an overview of procedures for comparing the mixing time to the time of air stripping and the retention time.

B. Mixing time from design evaluation

Procedures are supplied for calculating mixing time in submerged aeration units, surface aeration units, and jet aeration units. The mixing time determined in each approach estimates the time to achieve 95% mixing. Therefore, even though different procedures are used, they are all on the same basis.

1. Submerged aeration biological treatment units

Use Form 1 to estimate the dispersion coefficient for spiral flow aeration systems by the method of Fugii or use the default value of 0.068 m^2/s (Chambers). Next, use Form 2 to Calculate the value of u and L from the mean velocity and length of the aeration unit; then, use those values to calculate the dispersion number (D/uL). Form 3 is used to estimate the 95% mixing time from the dispersion number and using dispersion theory (Levenspiel). This 95% mixing time is the theoretical time to reach 95% of the maximum peak concentration in the unit. Calculate the 50% stripping time of chlorobenzene (the time required to strip 50% of the chlorobenzene in the aeration unit without biodegradation, also known as the stripping half-life) or by the provided estimation forms (Complete Form 4 and supporting forms). Calculate the ratio of the 95% mixing time to the 50% stripping time of chlorobenzene. Form 5 is used to compare 1) mixing time and 50% stripping time ratio, and 2) the mixing time-retention time ratio to the target parameters. Are these two ratios less than the target ratios? If the answer is yes, then the unit would be considered thoroughly mixed.

2. Surface aeration and submerged jet aeration biological treatment units

Obtain the pumping capacity of the aerators from the supplier or from an accurate correlation for the system. Calculate the turnover time as the ratio of the aeration unit volume to the volumetric pumping capacity. Use Form 9 to calculate the mixing time as five times the turnover time. Calculate the 50% stripping time of chlorobenzene by WATER8 (or the most recent update to this model) or by the provided estimation forms (Complete Form 4 and supporting forms). Calculate the ratio of the 95% mixing time to the 50% stripping time of chlorobenzene. Form 5 is used to compare 1) mixing time and 50% stripping time ratio, and 2) the mixing time-retention time ratio to the target parameters. Are these two ratios less than the target ratios? If the answer is yes, then the unit would be considered thoroughly mixed.

C. Mixing time from tracer test data

This method is based on measurement of a chemical tracer added to the influent as a pulse dose to demonstrate that the aeration unit of the biological treatment system is back-mixed to a degree that approaches the mixing characteristics of a theoretical completely back-mixed reactor. Tracer studies (Levenspiel) are often performed to determine the residence time distribution (RTD) of a reactor to compare with the theoretical retention time based on the reactor volume and the wastewater flow rate. Such studies are typically conducted before a unit is placed in service or returned to service in order to determine if the mixing and/or aeration systems are functioning in accordance with the design specifications. Tracer data from a RTD study will usually be suitable for use with the calculation procedures in this document for determining whether or not a biological treatment unit is sufficiently back-mixed to be considered a “thoroughly mixed treatment unit.” Discussions of tracer studies can be found in references 4 through 8.

The tracer study can be performed with or without the presence of activated sludge in the unit. Any chemical tracer can be used that is not biodegradable and does not adsorb significantly to suspended solids. Examples of acceptable tracers include lithium chloride, rhodamine WT and dextran blue.

The tracer study is conducted by rapidly introducing a predetermined quantity of the tracer as a spike or step change in target compound concentration into the influent to the aeration unit. If the tracer can not be added to the influent because of limited access, it can be added to the aeration unit directly at a location near the influent. Measure the concentrations of the tracer in the effluent as a function of time starting at the time of release of the tracer. Measurements of the tracer in the effluent can be performed with a continuous direct–reading instrument or can be performed by collecting grab samples at closely–spaced time intervals and measuring the tracer concentration in the laboratory.

Determine the mixing time as the time to reach 95% of the maximum peak tracer concentration in the effluent. One method to evaluate the tracer data is to plot the effluent tracer concentration data as the dependent variable (y axis) on a graph and the elapsed time as the independent variable (x axis). Determine the time where the curve reaches 95% of the peak concentration in the effluent. If the tracer was added as a step change input, the data could be analyzed by plotting concentration as the dependent variable (y axis) and inverse time as the independent variable (x axis) and extrapolating back to the y axis intercept for long time periods.

To determine if the biological treatment unit approaches the mixing performance of a thoroughly mixed reactor, first complete Form 7 to document the 95% mixing time determination. Next, Form 5 is completed to compare the 95% mixing time to the stripping time and the retention time. To complete Form 5, it is necessary to calculate the 50% stripping time of chlorobenzene by completing Form 4 and the supporting forms. Calculate the ratio of the 95% mixing time to the 50% stripping time of chlorobenzene. Form 5 is used to compare 1) mixing time and 50% stripping time ratio, and 2) the mixing time-retention time ratio to the target parameters. Are these two ratios less than the target ratios? If the answer is yes, then the unit would be considered thoroughly mixed. If the ratio on line 4 is less than or equal to the target ratio on line 5 and if the ratio on line 12 is less than or equal to the target ratio on line 13, then the biological treatment unit is considered to be a thoroughly mixed treatment unit.

D. Indicator Pollutant Testing

1. Description of procedure

This procedure is based on a statistical comparison of the concentration of an indicator parameter in the effluent (reactor exit) and the measured concentrations of this parameter in the aeration unit, all measured during the same time period. This procedure is used to evaluate the rate of mixing relative to the rate of loss by biodegradation or volatilization. This procedure is applicable to aeration units that have a single wastewater feed inlet or that split a wastewater feed among multiple inlets. This procedure is not applicable to aeration units in which different wastewater feeds are introduced separately through different inlets. If the concentrations of the indicator parameter in the effluent are statistically equivalent to the concentrations in the aeration units near the inlet at a 95% statistical significance level, then the aeration unit meets the criteria for a thoroughly mixed treatment unit (i.e., is back-mixed). Before conducting this procedure, you should confirm that there are no major variations in the flow rate and waste composition into the biological treatment system. In the case where the wastewater sent to the aeration unit is highly variable, it is recommended that the thoroughness of mixing be evaluated during a period of stable operating conditions or another procedure recommended in this document should be considered. If the variability of measured indicator concentrations is relatively great, the number of samples required to characterize the mixing characteristics of the aeration unit is so large that it is impractical to use this procedure. The steps in this procedure are described below.

Identify indicator parameter. An appropriate indicator parameter for this test is one that is being significantly biodegraded and not created by the biological treatment process. An appropriate indicator parameter is one that is measured in the influent with a high degree of confidence (greater than 99%) that the concentration is substantially greater than the concentration in the effluent. Examples of potential indicator parameters are: total organic carbon (TOC), chemical oxygen demand (COD), and specific volatile organic chemicals present in the wastewater. TOC and COD are not appropriate indicator parameters for wastewater containing significant quantities of compounds resistant to biodegradation, since the values of TOC and COD could be at constant values and may not be representative of the level of mixing . For example both a plug-flow reactor or a complete back-mix reactor with significant quantities of biodegradation resistant compounds could exhibit a constant level of TOC or COD; therefore, in this case the level of mixing as determined by the TOC/COD procedure for the plug-flow reactor could erroneously look the same as the level of mixing determined for the complete back-mix reactor. Conservative parameters such as total dissolved solids or chlorides are also not appropriate indicator parameters for this procedure since they are not expected to be removed either by biodegradation or volatilization. If a specific chemical is used as the indicator parameter then one of the more volatile primary constituents in the feed stream should be selected. An acceptable indicator parameter will be present in the inlet feed stream at much greater concentrations than after dispersion near the inlet of the aeration unit. The indicator parameter should be present in the effluent from the unit at a concentration that is above the quantitation limit of the approved analytical method used for the measurement.

Determine the sampling locations for the aeration unit. Three sampling locations shall be determined: the inlet, within the unit, and the exit. The inlet is sampled directly before entering the particular unit, and the exit is sampled directly at the outfall of the particular unit. The sample may be collected upstream provided conveyance is by closed pipe and no additional streams are added to the conveyance system. The sample within the unit will be taken as described in the following paragraph.

First determine the 50% stripping time of chlorobenzene by completing Form 4 and the supporting forms. Then use Form 6 to determine the maximum in unit sampling distance from the aeration unit inlet. This distance is determined from the 50% stripping time for chlorobenzene using the operating characteristics of the specific biological treatment process and the mean velocity flow of water through the aeration unit. Calculate the value of u as the mean velocity flow of water through this aeration unit using Form 6. Calculate the maximum sampling distance from the aeration unit inlet as the product of the 50% stripping time for chlorobenzene and the calculated value of u. Samples of the aeration unit contents should be taken at no greater distance from the inlet than this maximum sampling distance in order to avoid some of the interferences from potential volatilization losses. The success of sampling the unit with this method depends on an accurate sampling of the inlet stream after it mixes with the aeration unit contents. Sampling in the unit should be conducted in the flow path of the inlet stream after the inlet flow has an opportunity to mix with the unit contents. If the maximum sampling distance from the inlet as calculated using Form 6 is too close to the inlet for representative sampling of the mixing of the inlet with the unit contents, the lesser value of either ½ the distance to the closest aerator, a distance of 10 times the diameter of the wastewater inlet pipe , or 10 meters may be used as the alternative maximum sampling distance. This alternative maximum sampling distance may also be used for sampling the unit near the aeration unit exit.

Collection and handling of samples. A minimum of 3 grab samples should be collected from each of the following locations: (1) the influent to the biological treatment unit; (2) the effluent from the biological treatment unit; and (3) the aeration unit within the maximum sampling distance. The aeration unit samples shall be taken anywhere within the maximum sampling distance from the inlet. Note: these samples may be collected from the sides of the aeration unit. Measure the concentrations of the indicator parameter at each of these three locations. The aeration unit samples should be collected at a depth of 0.5 to 1.0 foot below the surface of the water. All samples shall be collected during the same 24 hour period, and each of the 3 sets of samples[1] should be collected to capture influent and effluent variability. If more than 3 samples are to be collected, then the sample collecting should be approximately equally spaced during the 24 hour period. The sets of influent and effluent samples shall be collected at time intervals separated by times roughly equal to 1/4 the hydraulic retention time (residence time). The aeration unit samples should be collected during the same time periods that the influent and effluent samples are collected. Grab samples should be collected with a device that can be opened beneath the water surface. Samples should be poured from the grab sampling device into sample bottles in a manner that will minimize volatilization of organic compounds. Sufficient

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[1] More than 3 samples may be collected from any of the locations, if necessary.

hydrochloric acid (HCl) shall be added to each sample to reduce the pH to less than 2 to stop the biodegradation in the sample bottles. The samples shall be then refrigerated at 4° C until analysis.

Number of Samples. When the coefficient of variance[2] for sampling is large, it is difficult to demonstrate differences between sets of data, even if the differences are significant. One method for improving the accuracy of the determination of differences between concentrations in the unit and concentrations in the exit of the unit is to increase the number of data sets that is used in the comparison. The following list presents a recommended minimum number of sequential data sets that should be collected from the unit, based upon the measured coefficient of variance.

Coefficient of variance	minimum sets
10	3
15	4
20	6
30	9
40	12
50	15

Measurement of indicator parameter. All sample preservation, storage, and analyses shall be performed in accordance with the NPDES analytical procedures at 40 CFR part 136. Only analytes with approved 40 CFR part 136 methods shall be used as indicator parameters. All quality assurance/quality control requirements of the applicable method shall be followed.

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[2] The coefficient of variance is the ratio of the standard deviation of the sample mean to the sample mean, multiplied by 100.

2. Evaluation of the mixing

Form 8 is used to evaluate the indicator parameter for mixing time. Three sets of data are entered in the three columns of the form: inlet data, exit data, and unit data. Paired data are placed in each row of the table. For each column, the average and standard deviation are calculated. There are two different methods to evaluate the data for Form 8: (1) The Student's t-test procedure to demonstrate that the unit data and the exit data are not significantly different and (2) a correlation method for paired data. The correlation method shall be used when there is a significant time trend in the data.

First calculate the difference in the inlet average and the unit average. This difference should be large and positive relative to the unit average. If this difference is not large relative to the unit average, consider evaluating a different indicator parameter or using a different method to determine mixing time. Next, evaluate the trend characteristics of the paired data. If there is an obvious time trend (unit concentration significantly increasing with time, the exit concentration decreasing with time, or other trend) skip the Student's t-test and proceed to the correlation test.

To use the Student's t-test, calculate the difference in the unit average and the exit concentration. If this difference is negative (the exit has a higher average than the unit), then the unit has been demonstrated to be throughly mixed because there is no evidence that the unit has a higher concentration than is present in the exit concentration. If this difference is positive, then evaluate the appropriate number of degrees of freedom (equals 4 for 3 sets of paired data, 6 for 4 sets, and 8 for 5 sets). Look up the t-value for 95% confidence level, one-sided test with the appropriate number of degrees of freedom. Evaluate the test parameter as the following:

$$test \; = \; \frac{(\,C_{unit} - C_{exit}\,)}{\sqrt{\dfrac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 + 1}\left(\dfrac{1}{n_1} + \dfrac{1}{n_2}\right)}}$$

σ is the standard deviation

n is the number of samples

C_{unit} is the unit concentration

C_{exit} is the exit concentration

1 refers to the unit

2 refers to the exit

If the test parameter is greater than the t-value for the 95% confidence level, then the unit concentrations are significantly greater than the exit concentrations, and the unit can not be considered well-mixed. If the test parameter is equal to or less than the t-value for the 95% confidence level, the unit can be considered well-mixed.

To use the correlation method, assume a linear correlation with a zero intercept. Use the least squares method to calculate the slope and standard error of the correlation. Subtract 1.00 from the slope and divide this result by the standard error. If this ratio is negative, use the absolute value of the ratio. Evaluate the appropriate number of degrees of freedom (equals 4 for 3 sets of paired data, 6 for 4 sets, and 8 for 5 sets). Look up the z value for 95% confidence level, one-sided test with the appropriate number of degrees of freedom. If the test parameter is equal to or less than the z value for the 95% confidence level, the unit can be considered thoroughly mixed . If the test parameter is greater than the z value for the 95% confidence level, the unit can not be considered thoroughly mixed.

V. References

1. Fujie, J., Fermentation Technology. Vol. 61, No.3, pp. 295-304, 1983.

2. Chambers, Wat. Sci. Tech. Vol. 20, No. 4/5, pp.121-132, 1988.

3. Grady, C. P. Leslie and Henry C. Lim, Biological Wastewater Treatment: Theory and Applications, p 658, Marcel Dekker, Inc., 1980.

4. Smith, J. M., Chemical Engineering Kinetics. McGraw-Hill, Inc., New York, 1981.

5. Levenspiel, Octave Chemical Reaction Engineering. John Wiley and Sons, Inc., New York, 1962.

6. Boyle, Wat. Sci. Tech. Vol. 16, pp. 91-106, 1984, co-author H. J. Campbell, Jr.

7. Slade, Appita J. Vol. 44, No. 1, pp. 25-28,1991.

8. Smith, Ecological Modeling. Vol. 69, pp. 267-285,1993

9. Battaglia, Wat. Res. Vol. 27, No. 2, pp. 337-341,1993

10. Jimenez, Wat. Res. Vol. 22, No. 10, pp. 1253-1257,1988

11. Frederick, Wat. Sci. Tech. Vol. 33, No. 7, pp. 49-56, 1996

12. Bode, Wat. Sci. Tech. Vol. 17, pp. 197-208, 1985

13. Marecos do Monte, Wat. Sci. Tech. Vol. 19, No. 12, pp. 219-227, 1987

14. Grijspeerdt, Environmental Technology, Vol. 15, pp. 483-488, 1994

Figure 1. Steps to Determine Biological Treatment Demonstration Path

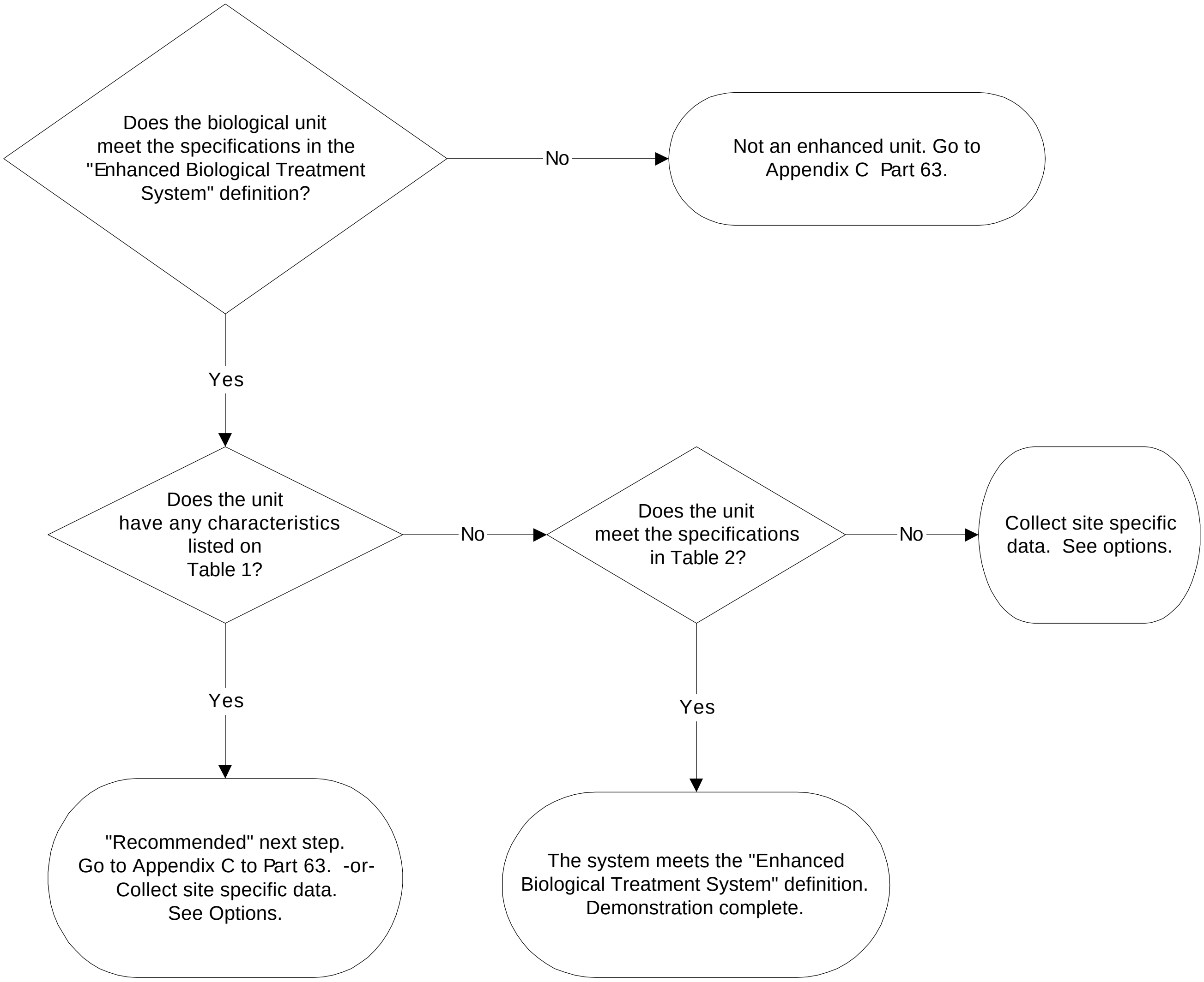


Table 1 Characteristics Indicative That a Biological Treatment System May Not Be Thoroughly Mixed *

Parameter	**Specifications**
Reactor Shape	1. Very long length to width ratio (greater than 4:1) with inlet at one end (width side) and outlet at opposite end. 2. System is designed or operated with biomass separation within the aeration system.
Mixing	1. Entering recycled biomass and wastewater are not quickly dispersed. Indications of poor dispersion may be: • visual indication of solids settling, • plume with visual differences in color or solids level. 2. The unit has baffles or partitions within the tank, or aeration units are operated in series. 3. Mixing does not occur between inlet and outlet.
Aeration Equipment	1. Rolling or tapered aeration. 2. Aerators (submerged or surface aerators) located such that there are zones that are not mixed (i.e., relatively stagnant or dead zones). 3. Significant distance between aeration equipment such that solids settling results.
Inlet	1. Wastewater inlet is located relative to the surface aerator such that the entering wastewater is exposed to the air before significant mixing. 2. Inlet located such that wastewater enters the unit at a relatively stagnant zone. 3. Inlet located above the surface, at the surface, or near the surface.
Effluent Outlet	Located such that short circuiting occurs between inlet and outlet.

* Biological systems must also meet the requirements in the "Enhanced Biological Treatment System" definition. Any one of the characteristics listed above would suggest that the biological unit may not meet the requirement to quickly disperse the recycled biomass and wastewater entering the unit to approach or achieve the uniform biomass distribution and organic compound concentration throughout the aeration unit.

Table 2 Thoroughly Mixed Treatment System Characteristics [1]

Parameter	Specifications
Reactor Shape	1. Circular Tank - No criteria, or 2. Rectangular Tank - Small length/width ratio (3:1 or less).
Depth	1. Diffused aeration systems - 15 ft minimum[2], or 2. Jet aeration system - Used in deep tanks (25 ft or greater)[2]. May be supplemented by mechanically driven mixing only at lower zone of tank.
Aerator Type	1. Diffused aeration - Well operated (unplugged) subsurface fine bubble diffused (Porous Diffusers) system such as plate, dome, disc, tube[2]. 2. Jet aeration system - per manufacturers criteria, with subsurface flow only.
Aeration equipment location	1. Diffused Systems - Full Floor Coverage (indicated by uniform bubble distribution on surface of basin). 2. Jet Systems - Liquid pumping with air diffusion occurs at bottom of tank.
Mixing	1. Unit does not have baffles or partitions. 2. Jet aeration system - Pumping rate should be > 5 times the entering wastewater and recycle flow rate. 3. Diffused system air flow rate > 10 scfm/1000ft^3
Inlet	1. Multiple inlet points or inlet located near point of significant mixing. 2. Submerged inlet.
Effluent Outlet	Located such that short circuiting does not occur between inlet and outlet.

1 Biological systems must also meet the requirements in the "Enhanced Biological Treatment System" definition.

2 Metcalfe and Eddy, Inc.

Form for the Estimation of Eddy Diffusivity with Submerged Aeration

Reference Fujie, 1983. Only use this form for spiral circulation due to aeration. Sprial circulation is usually found only in municipal plants. For more information, consult a reference book such as Metcalf and Eddy or WEF Aeration Manual.

	Name of site		
H	depth of unit (m)	1	
W	width of unit (m) (area/diameter for circular tanks)	2	
L	LENGTH [L] distance from inlet to reactor exit. (m) Represents the mean path of actual flow from inlet to exit. Can use diameter for circular tank. If the flow is across the width of a rectangular unit, enter the width here.	3	
Q	Flow rate water (m3/s)	4	
h	diffuser depth (m)	5	
A	Aeration rate per tank (m3 air/m3 liquid per h), volumetric rate of air divided by the volume of the unit.	6	
	for fine bubble system enter 1 on line 8.	7	

CALCULATION OF EDDY DIFFUSIVITY

Ugc	sup.air feed rate (cm/s) A*H/36	8	
theta	h*100*Ugc*(h/H)^0.5*(H/W)^0.333	9	
m	value from Table I.1 (see below)	10	
a	value from Table I.1 (see below)	11	
Uts	a*(theta^m) (cm/s)	12	
Utsc	Uts/100*3600 (m/h)	13	
lamda	0.0115*(1+H/L)^(-3)*Ugc^-0.34	14	
Ut	Q*3600/W/H	15	
E	diffusivity (m2/h) lamda*Utsc*(H+W)	16	
D	(m2/s) E/3600	17	

Table I.1

	m	a	
theta<=20	0.64	7	fine
theta>20	0.46	12	
theta<=20	0.78	3.5	coarse
theta>20	0.56	4.9	

DATA FORM FOR THE CALCULATION OF THE DISPERSION NUMBER FROM A SUBMERGED AERATION UNIT

NAME OF THE FACILITY for site specific dispersion number determination		
VOLUME OF REACTOR (m3)	1	
FLOW RATE of wastewater treated in the unit (m3/s)	2	
FLOW RATE OF RECYCLE (m3/s)	3	
LENGTH [L] distance from inlet to reactor exit. (m) Represents the mean path of actual flow from inlet to exit. Can use diameter for circular tank. If the flow is across the width of a rectangular unit, enter the width here.	4	
EDDY DIFFUSIVITY [D] from Form 1 line 17 if spiral agitation or default value of 0.068 (m2/s)	5	

CALCULATION OF THE DISPERSION NUMBER

TOTAL INLET FLOW (m3/s) Add the number on line 2 to the number on line 3. Enter the results here.	6	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 1 by the number on line 6. Enter the results hers.	7	
MEAN VELOCITY [U] (m/s) Divide the number on line 4 by the number on line 7. Enter the results here.	8	
DISPERSION NUMBER [D/UL] Divide the number on line 5 by the product of the number on line 8 and the number on line 4. Enter the results here.	9	

DATA FORM FOR THE EVALUATION OF THE MIXING TIME BASED UPON A DISPERSION NUMBER FOR SUBMERGED AERATION SYSTEMS.

NAME OF THE FACILITY for site specific biorate determination

DISPERSION NUMBER From Form 2, line 9.	1	
RETENTION TIME IN THE REACTOR (s) From Form 2, line 7.	2	

Value of dispersion number	mixing time ratio
0.025	0.85
0.1	0.8
0.15	0.7
0.2	0.6
0.25	0.514
0.5	0.330
1	0.199
2	0.107
4	0.042
6	0.013
0.300	0.459

CALCULATION OF THE ESTIMATE OF THE MIXING TIME

In the above table, look up the mixing time ratio using the value of the dispersion number on line 1. Enter this mixing time ratio on line 3. These values were obtained from Monte Carlo simulations of dispersion within circular tanks.

	3	
MIXING TIME (s) multiply the number on line 2 by the number on line 3.	4	

equation for estimating the mixing time= =IF x>6 use 0.01 else use 0.314375*(x^-0.5) -0.114921
Use this equation if the dispersion number is not within the range of the table.

DATA FORM FOR THE CALCULATION OF THE STRIPPING TIME FOR CHLOROBENZENE IN A BIOREACTOR

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		Chlorobenzene
AREA OF REACTOR SURFACE (m2)	1	
VOLUME OF REACTOR (m3)	2	
K, mass transfer coefficient (m/s) from Form 12, line F.	3	
Equivalent mass transfer coefficient (m/s) from Form 10, Line 6.	4	
Total Equivalent KL (m/s). sum of line 3 and line 4. Line 3 represents the contribution from surface volatilization and line 4 represents the contribution from volatilization into subsurface bubbles.	5	

CALCULATION OF THE ESTIMATE OF THE STRIPPING TIME

STRIPPING TIME (s) Divide the number on line 2 by the product of the number on line 1 and the number on line 5.	6	
50% STRIPPING TIME (s) Multiply the number on line 6 by 0.693.	7	

Form 5

DATA FORM FOR THE COMPARISON OF THE MIXING TIME TO THE STRIPPING TIME AND THE RETENTION TIME IN THE BIOREACTOR

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific mixing ratio determination		Chlorobenzene
MIXING TIME (s) From Form 3 line 4, or from Form 7 line 8, or from Form 9 line 12.	1	
Method of obtaining the mixing time	2	
50% STRIPPING TIME (s) From Form 4, line 7.	3	

COMPARISON OF THE MIXING TIME TO THE STRIPPING TIME

MIXING TIME-STRIPPING TIME RATIO Divide the number on line 1 by the number on line 3.	4	
Required target ratio	5	0.33
Is the stripping time ratio less than the target ratio?	6	

COMPARISON OF THE MIXING TIME TO THE RETENTION TIME

VOLUME OF REACTOR (m3)	7	
FLOW RATE of wastewater treated in the unit (m3/s)	8	
FLOW RATE OF RECYCLE in the full-scale bioreactor (m3/s)	9	
TOTAL INLET FLOW (m3/s) Add the number on line 8 to the number on line 9. Enter the results here.	10	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 7 by the number on line 10. Enter the results hers.	11	
MIXING TIME RETENTION RATIO Divide the number on line 1 by the number on line 11.	12	
Required target ratio	13	0.33
Is the retention time ratio less than the target ratio?	14	

DATA FORM FOR THE EVALUATION OF THE SAMPLING DISTANCE LIMITS

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific mixing ratio determination		Chlorobenzene
STRIPPING TIME (s) From Form 4, line 6.	1	
VOLUME OF REACTOR (m3)	2	
FLOW RATE of wastewater treated in the unit (m3/s)	3	
FLOW RATE OF RECYCLE in the full-scale bioreactor (m3/s)	4	
LENGTH [L] distance from inlet to reactor exit. (m) Represents the mean path of actual flow from inlet to exit. Can use diameter for circular tank. If the flow is across the width of a rectangular unit, enter the width here.	5	

CALCULATION OF THE SAMPLING LIMIT

TOTAL INLET FLOW (m3/s) Add the number on line 3 to the number on line 4 Enter the results here.	6	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 2 by the number on line 6. Enter the results hers.	7	
MEAN VELOCITY [U] (m/s) Divide the number on line 5 by the number on line 7. Enter the results here.	8	
SAMPLING DISTANCE LIMIT (m) multiply the number on line 1 by the number on line 8. Enter the results here.	9	

Form 7

DATA FORM FOR THE SUMMARY OF TRACER RESULTS

This form is based upon the concept that a tracer is placed in the inlet of a reactor and the concentrations in the exit of the reactor are measured as a function of time. Well-mixed systems will not have bypassing and the tracer curve may be analyzed to demonstrate that the retention time in the reactor is approximately the same as the theoretical value. Verbal descriptions are requested below to assist in the interpretation of the data.

NAME OF THE FACILITY for site specific tracer testing

COMPOUND used for the tracer evaluation

Attach a graph of the concentration of tracer vs. time and a short general description of the tracer test. The details of the test report should be available for inspection.

Location of tracer release (general verbal description, such as inlet on the side of a circular tank with the exit on the opposite side)	1	
Location of tracer measurement (such as in exit of circular tank)	2	
FLOW RATE of wastewater treated in the unit (m3/s)	3	
FLOW RATE OF RECYCLE in the full-scale bioreactor (m3/s)	4	
VOLUME OF REACTOR (m)	5	
location of internal pumping inlet (draft tube of surface aerator, inlet of jet mixer, location of submerged agitators)	6	

Time of tracer concentration peak on graph (s)	7	
Time to reach 95% of tracer concentration peak on graph (s)	8	

CALCULATION OF THE MIXING TIME RATIO

TOTAL INLET FLOW (m3/s) Add the number on line 3 to the number on line 4 Enter the results here.	9	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 5 by the number on line 9. Enter the results here.	10	
Mixing time ratio. Divide the number on line 8 by the number on line 10 and enter the results here.	11	
Target ratio for mixing time determination	12	0.33
Is the mixing time ratio less than the target ratio?	13	

Lines 9 through 13 are optional if the mixing time of line 8 is transferred to Form 5 line 1.

Form 8

FORM FOR THE EVALUATION OF INDICATOR PARAMETER MIXING

concentrations in the biological treatment unit

	inlet	exit	unit
sum of data			
N, number			
average, sum/ number			
SD			
CV			

Method 1. Difference in inlet average and unit

Difference in unit and exit D

Degrees of freedom Nunit + Nexit -2

T value at 95% confidence level, 1 side test

Sw SQRT((SDunit^2*(Nunit-1)+Sdexit^2*(Nexit-1))/(Nunit+Nexit-2))

test parameter -D/Sw /SQRT(1/Nexit+1/Nunit)

Is the test parameter greater than the t value?

use t test if no, suggests well mixed.

reject alternative hypothesis

accept null hypothesis, well mixed Well mixed?

Method 2. Slope equivalency method

Slope of the correlation between unit and exit concentrations.

Intercept of the correlation

standard error

r squared

difference, absolute value of (slope - 1)

ratio, difference divided by the standard error

z value at 95% confidence level, 1 side test

Is the ratio greater than the z value?

Is the slope equivalent to 1? (yes if the ratio is not greater than z value)

Can the unit be considered well mixed? (yes if the ratio is equivalent to 1)

DATA FORM FOR THE MIXING TIME FROM PUMPING RATE

Obtain the pump rate specifications for surface aerators from the equipment manufacturer.

NAME OF THE FACILITY for site specific pumping rate evaluation

Type of mixing equipment 1	1	
number of units of equipment 1	2	
capacity of pumping unit 1 (m3/s)	3	
Type of mixing equipment 2	4	
number of units of equipment 2	5	
capacity of pumping unit 2 (m3/s)	6	
Volume of biological reactor (m3)	7	

CALCULATION OF THE MIXING TIME

TOTAL FLOW 1 (m3/s) Multiply the number on line 2 by the number on line 3 Enter the results here.	8	
TOTAL FLOW 2 (m3/s) Multiply the number on line 5 by the number on line 6 Enter the results here.	9	
TOTAL FLOW (m3/s) Add the number on line 8 and the number on line 9. Enter the results here.	10	
Recirculation time. Divide the number on line 7 by the number on line 10.	11	
Mixing time (s). Multiply the number on line 11 by the number 5.	12	

DATA FORM FOR THE ESTIMATION OF THE EQUIVALENT KL FOR A SUBMERGED AIR SYSTEM

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		Chlorobenzene
VENT RATE of total gas leaving the unit (G, m3/s)	1	
TEMPERATURE of the liquid in the unit (deg. C)	2	
ESTIMATE OF Henry's law constant (H, g/m3 in gas / g/m3 in liquid). Obtained from Form 13 line 7.	3	
AREA OF REACTOR (m2)	4	

CALCULATION OF THE ESTIMATE OF EQUIVALENT KL FROM SUBMERGED AIR

[H G] ESTIMATE (m3/s) Multiply the number on line 1 by the number on line 3. Enter the results here.	5	
EQUIVALENT KL. Divide the number on line 5 by the number on line 4. Enter the results on line 6.	6	

Form 11

FORM FOR CALCULATING THE MASS TRANSFER COEFFICIENT FOR A QUIESCENT SURFACE IMPOUNDMENT

FACILITY NAME for site specific biorate determination	1	
COMPOUND for site specific biorate determination	2	Chlorobenzene

Input values

Enter the following:

F - Impoundment fetch (m)	3	
D - Impoundment depth (m)	4	
U10 - Windspeed 10 m above liquid surface (m/s)	5	
Dw - Diffusivity of compound in water (cm2/s)	6	
Dether - Diffusivity of ether in water (cm2/s)	7	
µG - Viscosity of air, (g/cm-s)	8	
G - Density of air, (g/cm3)	9	
Da - Diffusivity of compound in air, (cm2/s)	10	
A - Area of impoundment, (m2)	11	
H - Henry's law constant, (atm-m3/g mol)	12	
R - Universal gas constant, (atm-m3/g mol. K)	13	
µL - Viscosity of water, (g/cm-s)	14	
L - Density of liquid, (g/cm3)	15	
T - Impoundment temperature, (C)	16	

Calculate the following:

Calculate F/D:	17	

A. Calculate the liquid phase mass transfer coefficient, kL, using one of the following procedures, (m/s)

1 Where F/D < 14 and U10 > 3.25 m/s, use the following procedure from MacKay and Yeun:

Calculate the Schmidt number on the liquid side, ScL, as follows: ScL = µL/ (L x Dw)	18	
Calculate the friction velocity, U*, as follows, (m/s): U* = 0.01 x U10(6.1 + 0.63 U10)^0.5	19	
Where U* is > 0.3, calculate kL as follows: kL = (1.0 x 10^-6) + (0.00341)U* x ScL^-0.5	20	
Where U* is < 0.3, calculate kL as follows: kL = (1.0 x 10^-6) + (0.0144)(U*)^2.2 x ScL^-0.5	21	

2 For all other values of F/D and U10, calculate kL using the following procedure from Springer:

Where U10 is < 3.25 m/s, calculate kL as follows:

kL = 2.78 x 10^-6(Dw/Dether)^(2/3) 22

Where U10 is > 3.25 and 14 < F/D < 51.2, Calculate kL as follows:
kL = [2.605 x 10^-9(F/D) + 1.277 x 10^-7] U10^2 (Dw/Dether)^(2/3) 23

Where U10 > 3.25 m/s and F/D > 51.2, calculate kL as follows:
kL = (2.611 x 10^-7)U10^2 (Dw/Dether)^(2/3) 24

B. Calculate the gas phase mass transfer coefficient, kG, using the following procedure from MacKay and Matsasugu, (m/s):

Calculate the Schmidt number on the gas side, ScG, as follows: ScG =µG/(G x Da) 25

Calculate the effective diameter of the impoundment, de, as follows, (m):
de = (4A/3.14)^0.5 26

Calculate kG as follows, (m/s): kG = 0.00482 U10^0.78 ScG^-0.67 de^-0.11 27

C. Calculate the partition coefficient, Keq, as follows: Keq = H/[R(T+273)] 28

D. Calculate the overall mass transfer coefficient, Kq, as follows, (m/s):
1/Kq = 1/kL + 1/(Keq x kG) 29

Where the total impoundment surface is quiescent:
KL = Kq 30

Where a portion of the impoundment surface is turbulent, continue with Form 12.

Form 12

DATA FORM FOR CALCULATING THE MASS TRANSFER COEFFICIENT FOR AN AERATED SURFACE IMPOUNDMENT

Facility Name:
Waste Stream Compound: Chlorobenzene

Enter the following:

J - Oxygen transfer rating of surface aerator, (lb O2/hr-hp)
POWR - Total power to aerators, (hp)
T - Water temperature, (C)
Ot - Oxygen transfer correction factor
MWL - Molecular weight of liquid
area per agitator (M2)
At - Turbulent surface area of impoundment, (ft2)
(If unknown, use values from Table 1)
A - Total surface area of impoundment, (ft2)
rho L - Density of liquid, (lb/ft3)
Dw - Diffusivity of constituent in water, (cm2/s)
Do - Diffusivity of oxygen in water, (cm2/s)
d - Impeller diameter, (cm)
w - Rotational speed of impeller, (rad/s)
a - Density of air, (gm/cm3)
N - Number of aerators
gc - Gravitation constant, (lbm-ft/s2/lbf)
d* - Impeller diameter, (ft)
Da - Diffusivity of constituent in air, (cm2/s)
MWa - Molecular weight of air
R - Universal gas constant, (atm-m3/g mol. C)
H = Henry's law constant, (atm-m3/g mol)

Calculate the following:

A. Calculate the liquid phase mass transfer coefficient, kL, using the following Equation from Thibodeaux:,

kL =[8.22 x 10^-9 J (POWR)(1.024)^(T-20) Ot 10^6 MWL/(At x rhoL/62.37)] (Dw/Do)^0.5, (m/s)

B. Calculate the gas phase mass transfer coefficient, kG, using the following procedure from Reinhardt:,

Calculate the viscosity of air, µa, as follows, (g/cm.s):
µa = 4.568 x 10^-7 T + 1.7209 x 10^-4

Calculate the Reynold's number as follows:
Re = d^2 w a/µa

Calculate power to impeller, PI, as follows, (ft.lbf/s):
PI = 0.85 (POWR) 550/N

Calculate the power number, p, as follows:
p = PI gc/(rho d*^5 w^3)

Calculate the Schmidt number, ScG, as follows:
ScG = µa/ (a x Da)

Calculate the Fronde number, Fr, as follows:
Fr = d* x w^2 /gc

Calculate kG as follows:
kG = 1.35 x 10^-7 Re^1.42 p^0.4 ScG^0.5 Fr^-0.21 Da MWa/d, (m/s)
if quiescent gas phase mass transfer coefficient is used, enter here else use above line.

C. Calculate the partition coefficient, Keq, as follows:
Keq = H/[R(T+273)]

D. Calculate the overall turbulent mass transfer coefficient, Kt, as follows, (m/s):
1/Kt = 1/kL + 1/(Keq x kG)

E. Calculate the quiescent mass transfer coefficient, Kq, for the impoundment using Form 11 line 29.

F. Calculate the overall mass transfer coefficient, KL, for the impoundment as follows: KL = (A-At)/A*Kq + At*Kt/A

PROCEDURES FORM FOR THE ESTIMATION OF THE KL FROM WATER8 a.b

Motor horsepower, hp	At, Turbulent area,		Effective depth, ft	V, Agitated volume, ft3	aV, Area per volume ft2/ft3
	ft2	m2			
5	177	16.4	10	1,767	0.1002
7.5	201	18.7	10	2010	0.1000
10	227	21	10.5	2383	0.0953
15	284	26.4	11	3119	0.0911
20	346	32.1	11.5	3983	0.0869
25	415	38.6	12	4986	0.0832
30	491	45.7	12	5890	0.0834
40	661	61.4	13	8587	0.0770
50	855	79.5	14	11970	0.0714
60	1075	100	15	16130	0.0666
75	1452	135	16	23240	0.0625
100	2206	205	18	39710	0.0556

a Data for a high speed (1,200) rpm) aerator with 60 cm propeller diameter (d).

b This table provides information potentially useful for the value of At in Form 12.

Form 13

DATA FORM FOR THE ESTIMATION OF THE HENRY'S LAW CONSTANT FOR A COMPOUND IN THE BIOLOGICAL TREATMENT UNIT

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		Chlorobenzene
LISTED HENRY'S LAW VALUE AT 25 degrees Celsius. (ratio of mol fraction in gas to mole fraction in water)	1	
TEMPERATURE of the liquid in the unit (deg.C)	2	
CALCULATION OF K		
Temperature adjusted Henry's law value (equals the value on line 1 if the temperature on line 2 is 25)	3	

Discuss the basis of the temperature adjustment.

Temperature in degrees Kelvin. Add 273.16 to the number on line 2. Enter the results here.	4	
Temperature ratio. Divide 273.16 by the number on line 4. Enter the results here.	5	
Henry's Law adjustment factor. Multiply the number on line 5 by 0.804 and enter the results here.	6	
Henry's Law value (g/m3 gas per g/m3 liquid) Multiply the number on line 3 by the number on line 6 and divide the results by 1000. Enter the results here and on Form 10 line 3.	7	
Henry's Law value (atm m3 per mol) Divide the number on line 3 by 55555 and enter the results here.	8	

APPENDIX B – EBS TRACER STUDY REPORT

New Indy – Catawba, SC
Tracer Study Report

Project Synopsis

The New Indy paper mill located in Catawba, SC requested Environmental Business Specialists, LLC (EBS) to conduct a tracer study on the Aerated Stabilization Basin (ASB). The purpose of this study was to determine the hydraulic retention time of the ASB and also to verify the flow patterns within the basin.

Project Components

***YSI profile* –** Direct field readings were collected using a YSI ProPlus handheld multiparameter meter at each site. Parameters measured were temperature, pH, dissolved oxygen (DO) concentrations, and oxidation-reduction potential (ORP); *Table 1*. All sampling locations are shown in *Figure 1*.

***Tracer Study* -** The study was initiated on 6/8/21 at 11:00 a.m. with the introduction of four 55-gallon drums of 40% w/w lithium chloride brine to the inlet of the ASB. An automated sampler was positioned at the effluent of the basin and samples were collected for approximately three times the theoretical retention time of the basin. The sampling for retention time was completed on 7/3/21 at 10:00 a.m. In addition to the effluent samples collected to calculate retention time, samples were collected throughout the basin after the tracer study was initiated for flow pattern determination. All lithium samples were analyzed by Pace Analytical in St. Rose, LA using atomic emission spectroscopy, and the resulting data was analyzed per the NCASI Bulletin 408.

System Overview

The wastewater treatment system (WWTS) consists of a primary clarifier followed by a 63-acre ASB. The underflow of the primary clarifier goes to an Equalization (EQ) Basin, and the supernatant of the EQ combines with the primary clarifier overflow before the ASB. The ASB consists of 49 surface aerators, 38 of which are currently operational as of 8/3/21. The effluent of the ASB flows into the #1 Holding Pond, which contains two surface aerators in the front end of the pond. The #1 Holding Pond discharges into the Catawba River. It should be noted that the location of the aerators on the following figures is not indicative of the current placement or the amount in service. This is due to the inability to obtain exact GPS locations of the aerators as a result of the solids accumulation in the ASB. *Appendix A* shows an aerial image of the WWTS.

Glossary

- Calculated Retention Time (CRT) – Average hydraulic retention time based on the results from the lithium tracer study.
- Theoretical Retention Time (TRT) – Retention time derived from the volume of the basin from the depth survey divided by the average daily flow.
- Morrill Index – Ratio of the 90% tracer recovery time to the 10% tracer recovery time, representing the deviation from pure plug flow characteristics. A Morrill Index of 1 indicates pure plug flow and an index of 21.5 indicates complete mix. While this is not an exact indicator of the hydraulic character of the treatment system, it is useful for an initial characterization of the mixing conditions.
- Percent Utilization of volume – Estimate of how much of the basin's available volume is currently being utilized for treatment. This is the calculated retention time (CRT) from the tracer study divided by the theoretical retention time (TRT) from the depth survey.

Key Findings

- The calculated retention time of the ASB is 3.7 days.
    - Following the completion of dredging, it is recommended to conduct a depth survey of the ASB to obtain a more accurate volume of the basin.

- Lithium was initially detected at the effluent of the ASB in 0.5 days (11.0 hrs) and the peak concentration was detected in 1.3 days.
    - Loading is expected to follow this same trend.

- The percent basin utilization is 79%. This suggests that the majority of the basin is being utilized for treatment; however, there are areas of the basin not being fully utilized due to the accumulation of solids.

- Temperatures ranged from 31.3 – 37.1°C throughout the ASB.

- All pH measurements were within the optimal range for bacterial health.

- DO concentrations were typically less than 0.10 mg/L and the ORP values indicated anoxic and anaerobic conditions.

YSI Profile Results

Temperatures ranged from 31.3-37.1°C within the ASB. *Figure 2* depicts the temperatures observed throughout the ASB. For a typical aeration basin, optimal mesophilic bacterial growth occurs within a temperature range of 20-35°C with maximum reaction rates occurring at approximately 30 - 35 °C. Different types of mesophilic bacteria can acclimate and still thrive at temperatures slightly warmer than the optimal range. However, as temperatures continue to increase beyond the optimal range, the growth rate of mesophilic bacteria is significantly diminished. At 45°C mesophilic bacteria essentially stop growing. All temperatures measured were within the target range.

The optimal pH range for an aeration basin is 6.50-8.50. The pH across the ASB ranged from 7.15-7.83; *Figure 3*. All pH measurements were within the optimal range for bacterial health.

Areas of high bacterial activity are typically characterized by low D.O. concentrations (*Figure 4*). As activity slows and the oxygen demand within the WWTS decreases, DO concentrations tend to increase. The DO data collected shows concentrations varied throughout the basin, ranging from 0.07 mg/L to 3.66 mg/L, with the majority typically being less than 1.0 mg/L. This is an indication that during the time of sampling, the system was oxygen deficient, which can limit the amount of treatment that will occur.

When DO concentrations fall below 0.50 mg/L, ORP (*Figure 5*) becomes a more reliable parameter to measure and determine metabolic conditions within a system. Values less than -50 mV indicate anaerobic conditions, from -50 mV to +50 mV is anoxic, and greater than +50 mV is aerobic. As with the DO, the ORP concentrations varied, but all measurements across the ASB were indicative anoxic and anaerobic conditions.

Figure 1: Sample locations

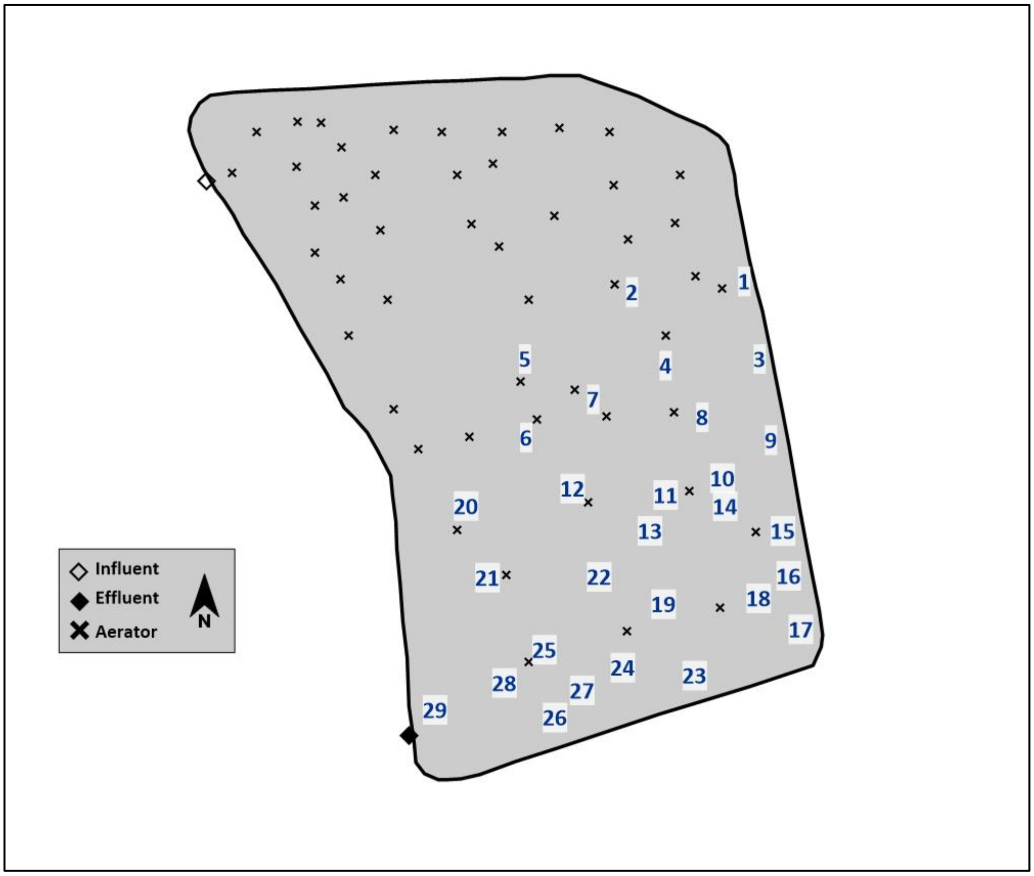


Table 1: Field readings

Sample ID	Temperature (°C)	pH (SU)	DO (mg/L)	ORP (mV)
1	35.9	7.83	0.41	-80.2
2	34.1	7.58	0.15	-65.1
3	35.8	7.58	0.67	-64.2
4	33.0	7.54	0.08	-96.1
5	33.4	7.47	0.18	-109.7
6	34.6	7.52	0.51	-97.1
7	34.2	7.51	1.08	-61.8
8	34.1	7.51	0.67	-44.2
9	33.1	7.46	0.53	-51.7
10	33.0	7.46	0.09	-93.1
11	32.9	7.46	0.78	-45.9
12	32.5	7.48	1.47	-28.5
13	31.3	7.49	1.14	-29.7
14	34.2	7.46	0.07	-162.2
15	33.1	7.43	0.08	-141.7
16	32.6	7.50	3.66	-13.2
17	32.6	7.51	1.04	-10.8
18	33.2	7.48	0.10	-93.5
19	31.7	7.48	0.44	-66.1
20	31.6	7.48	0.69	-54.7
21	37.1	7.50	2.06	-44.7
22	36.6	7.52	1.88	-60.0
23	35.4	7.15	0.10	-311.7
24	32.7	7.37	0.13	-211.0
25	31.6	7.39	0.89	-151.4
26	32.9	7.44	1.58	-101.4
27	32.6	7.41	0.12	-209.2
28	32.5	7.45	0.11	-154.2
29	33.8	7.43	0.11	-219.5

Figure 2: Temperature (°C)

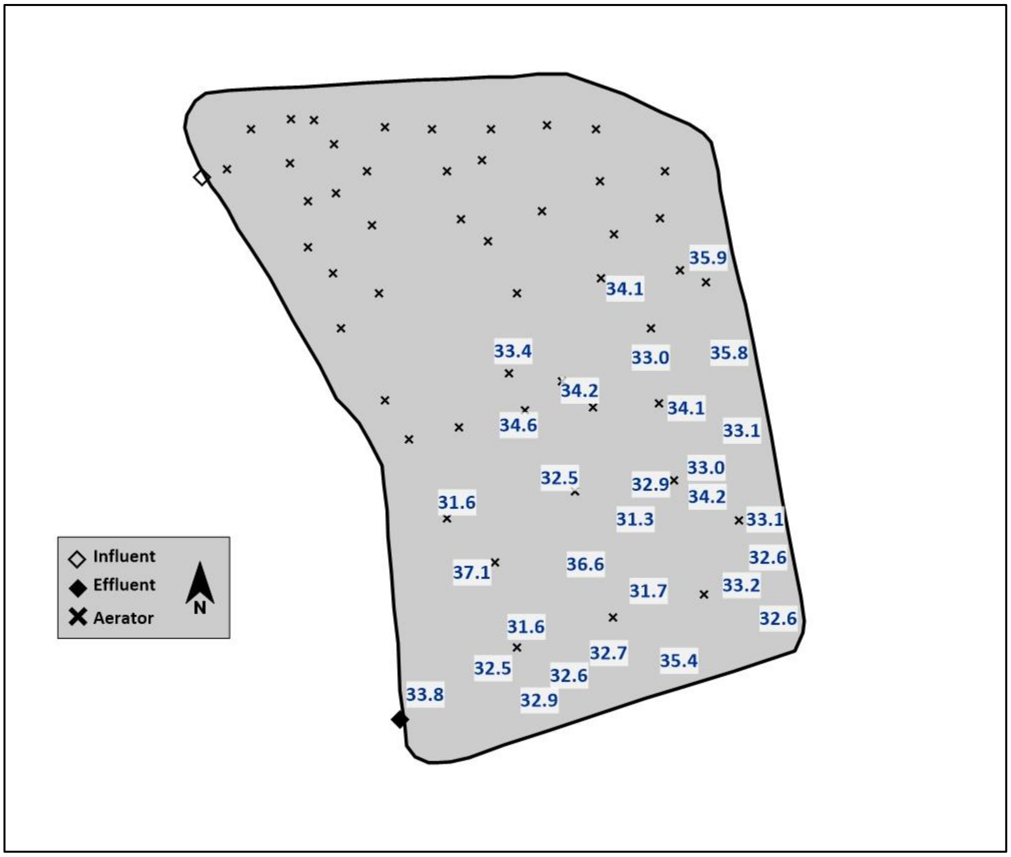


Figure 3: pH (SU)

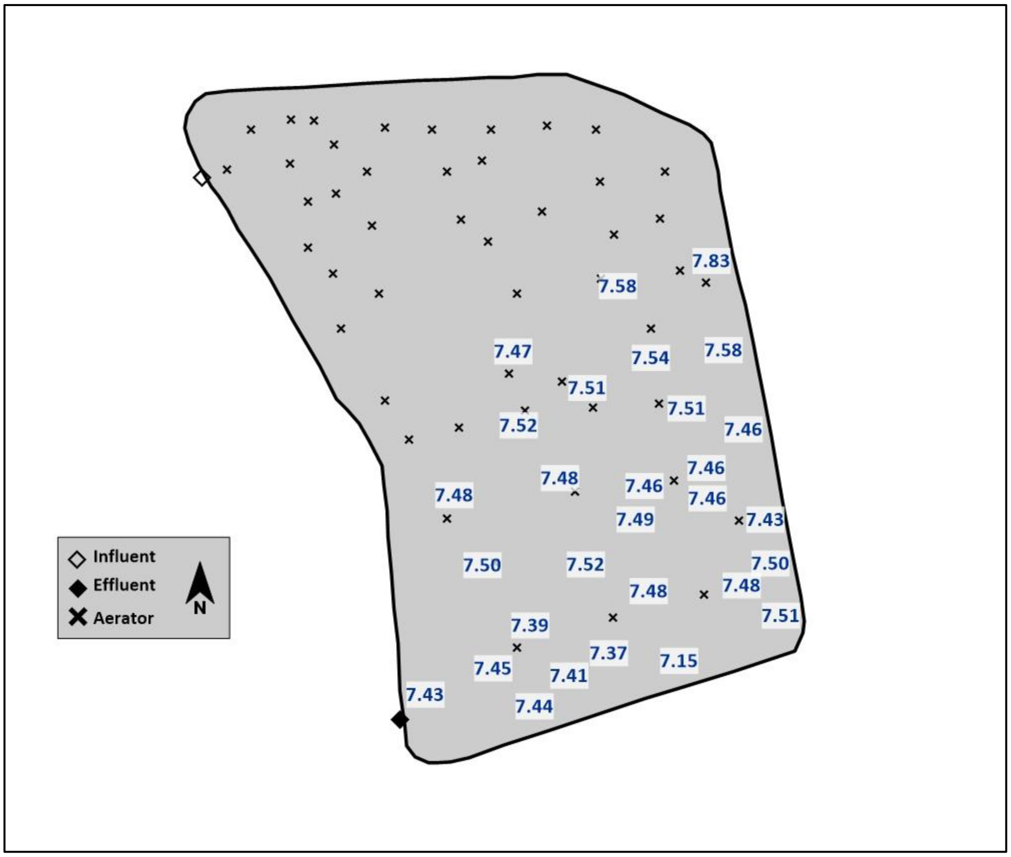


Figure 4: DO (mg/L)

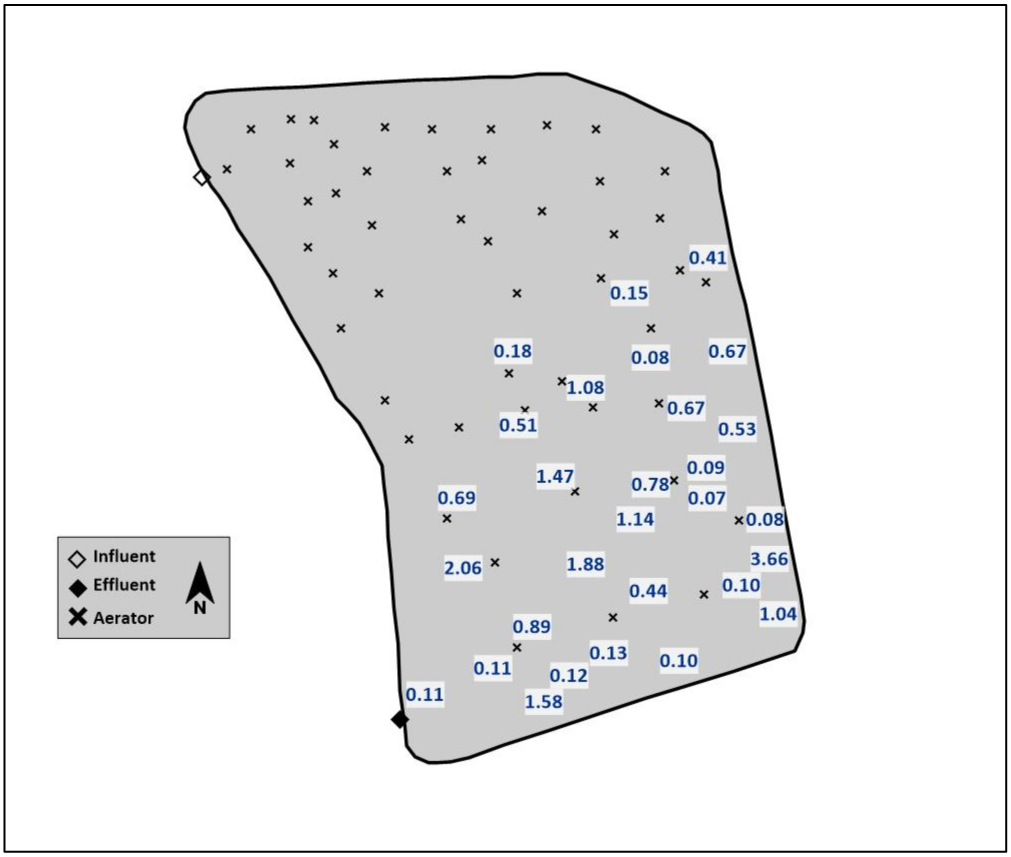
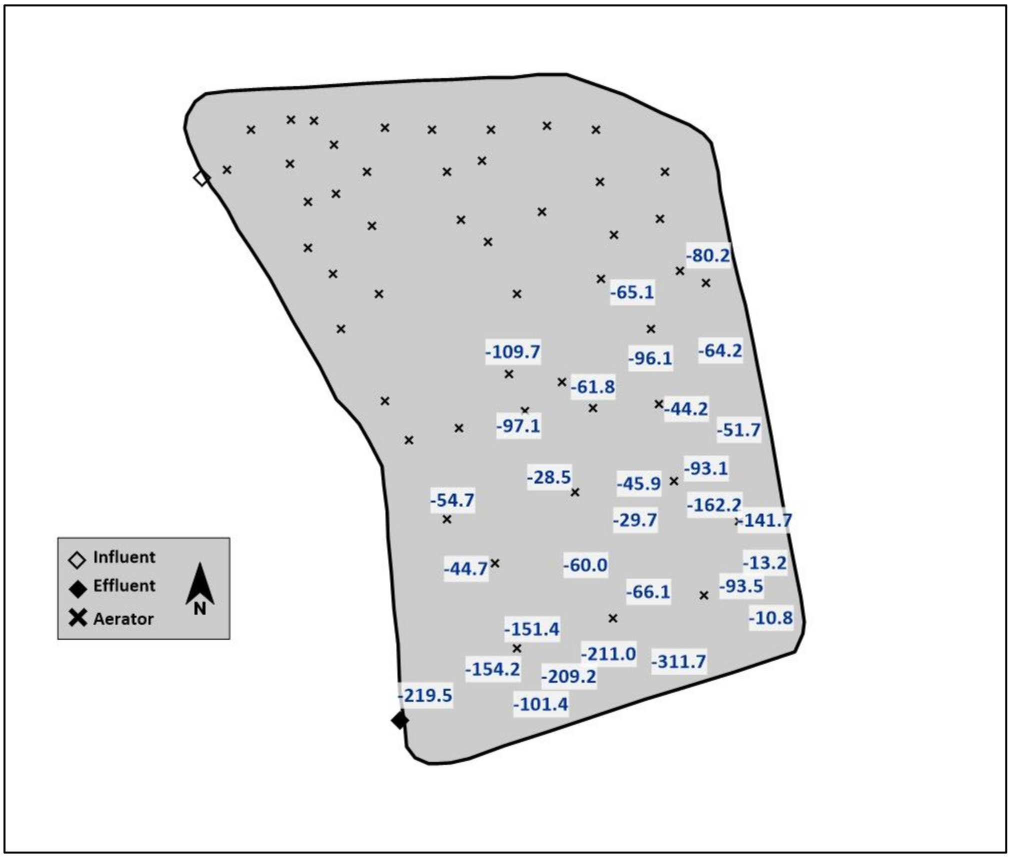


Figure 5: ORP (mV)



Tracer Study Results

The tracer study results are included in *Table 2*. The results indicate a calculated retention time of 3.7 days for the ASB. The lithium tracer initially appeared at the ASB Effluent in 0.5 days or (11.0 hrs). Peak lithium concentrations were detected in 1.3 days at the ASB effluent. Loading is expected to follow this same pattern. *Figure 6* shows the lithium concentrations collected over time at the ASB Effluent.

The Morrill Index of the ASB is 6.0 which indicates the basin functions closer to a plug flow system than complete mix.

The study indicates that the percent utilization of ASB is 79%. This suggests that the majority of the available volume is being utilized for treatment; however, there are areas that are not being fully utilized due to accumulation of solids.

Figure 7 contains the lithium concentrations detected throughout the basin five hours after the lithium was introduced to the system. *Figure 8* contains the same lithium concentrations as Figure 1 overlayed on an aerial image of the ASB. While high amounts of solids in the northwest portion of the basin limited accessibility, the majority of the lithium is likely still concentrated in this area as the only concentrations greater than 0 mg/L were detected in the northeast portion where the five-hour samples were collected. All remaining concentrations in the rest of the ASB were negligible.

Figure 9 contains the lithium concentrations detected throughout the basin twenty-four hours after the lithium was introduced and *Figure 10* contains the same lithium concentrations overlayed on the aerial image of the ASB. At this point concentrations were dispersed and mixed throughout the basin with the bulk of lithium being detected in the middle of the basin and near the effluent. Channeling due to solids accumulation is likely limiting the amount of flow to certain areas. This is an indication that the basin is not being fully utilized as lithium concentrations ranged from 0.03 mg/L to 0.42 mg/L. This will effectively reduce the retention time and working volume of the basin.

Table 2: Tracer study results

	ASB
Average flow during study (MGD)	25.5[1]
Volume based on depth survey (MG)	120.0[2]
Theoretical retention time (days)	4.7
Initial tracer observed (days)	0.5 (11.0 hrs)
Peak concentration observed (days)	1.3
10% tracer recovered (days)	1.2
50% tracer recovered (days)	1.7
90% tracer recovered (days)	7.0
Total lithium recovered	84%
Morrill index	6.0
Percent utilization of volume	79%
Calculated retention time (days)	3.7

[1] Average flow calculated using ASB Influent flow from 6/8/21 – 7/3/21.
[2] Volume based on depth survey completed in 2015.

Figure 6: Lithium concentrations over time

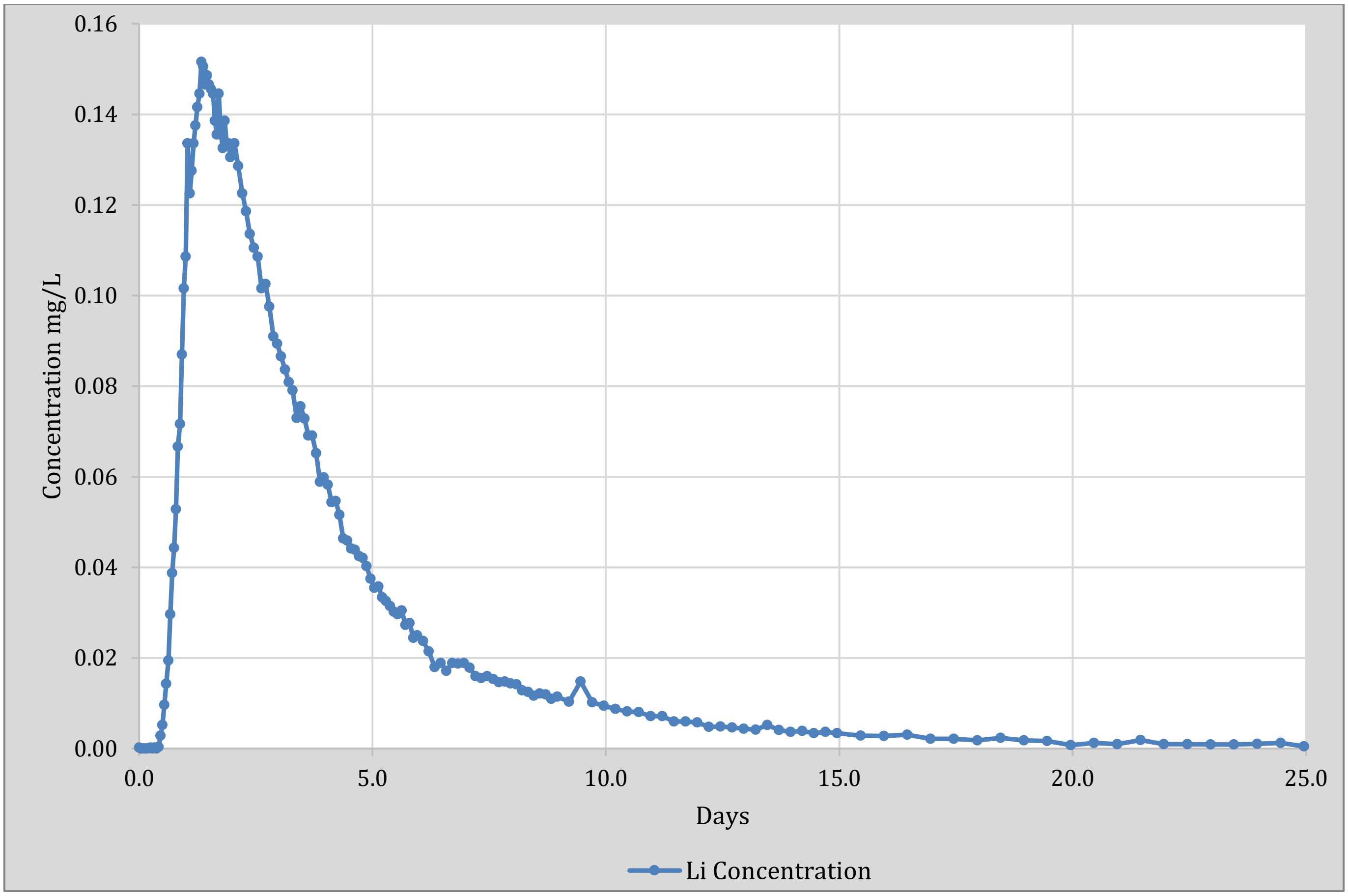


Figure 7: 5 hr lithium profile

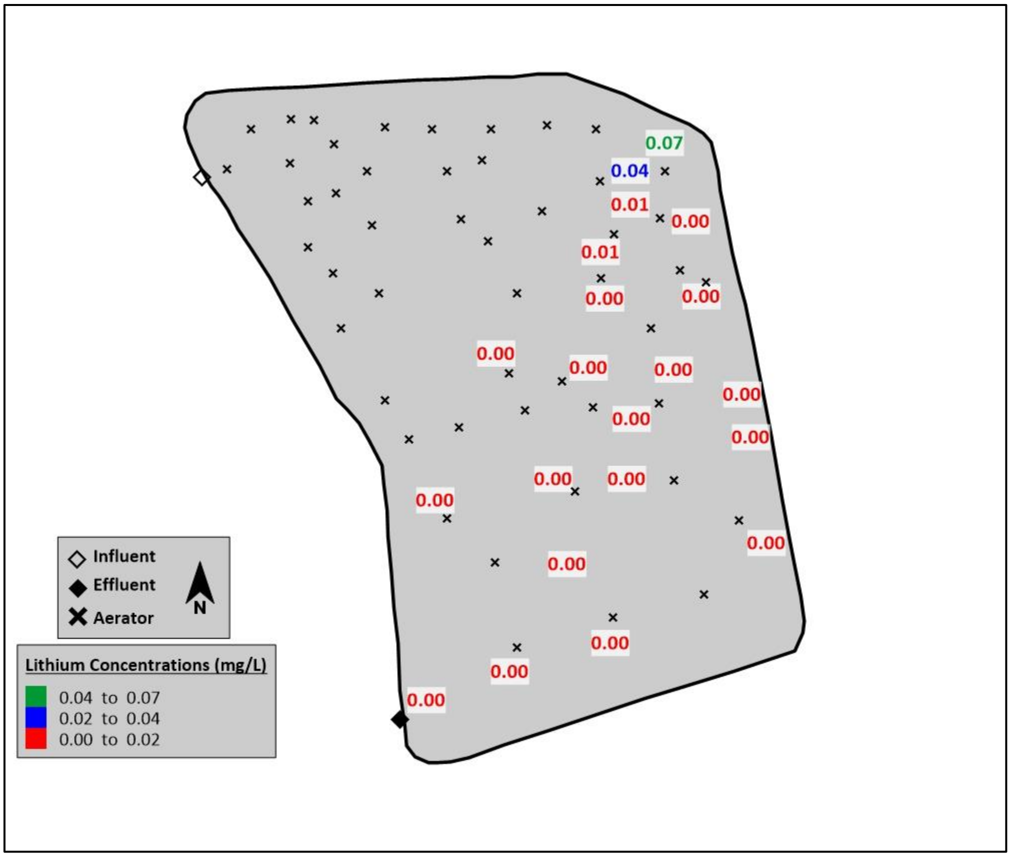


Figure 8: 5 hr lithium profile aerial overlay

Figure 9: 24 hr lithium profile

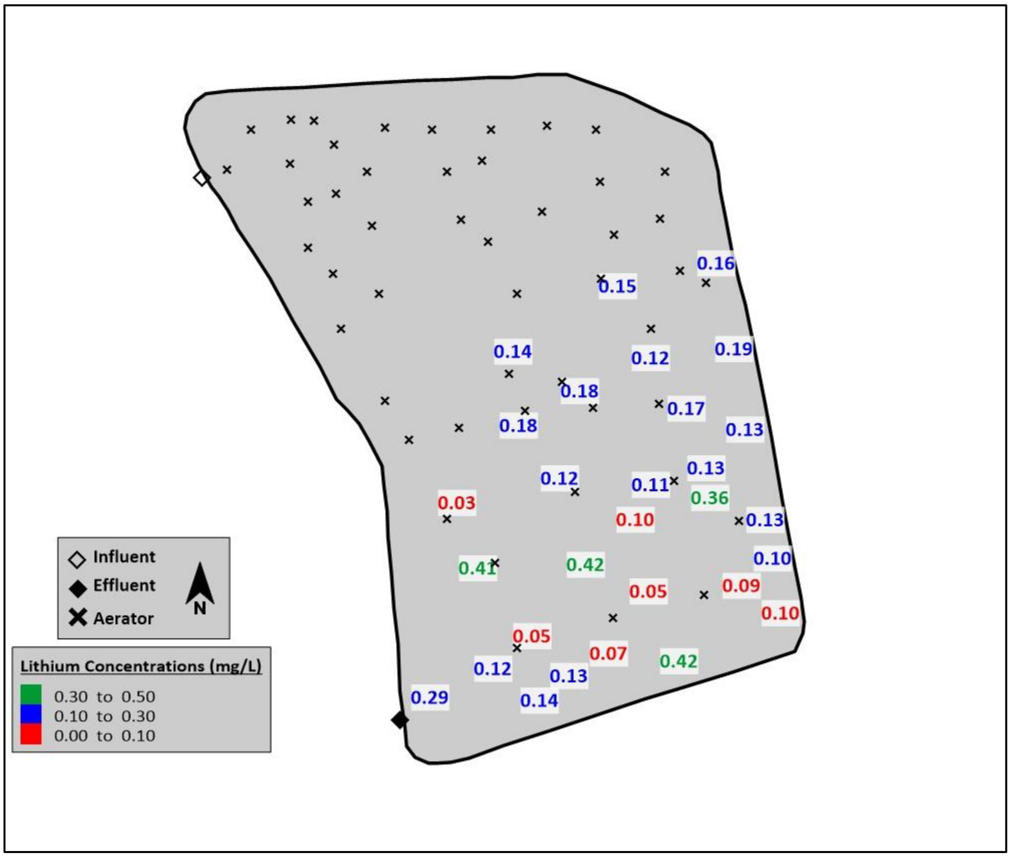
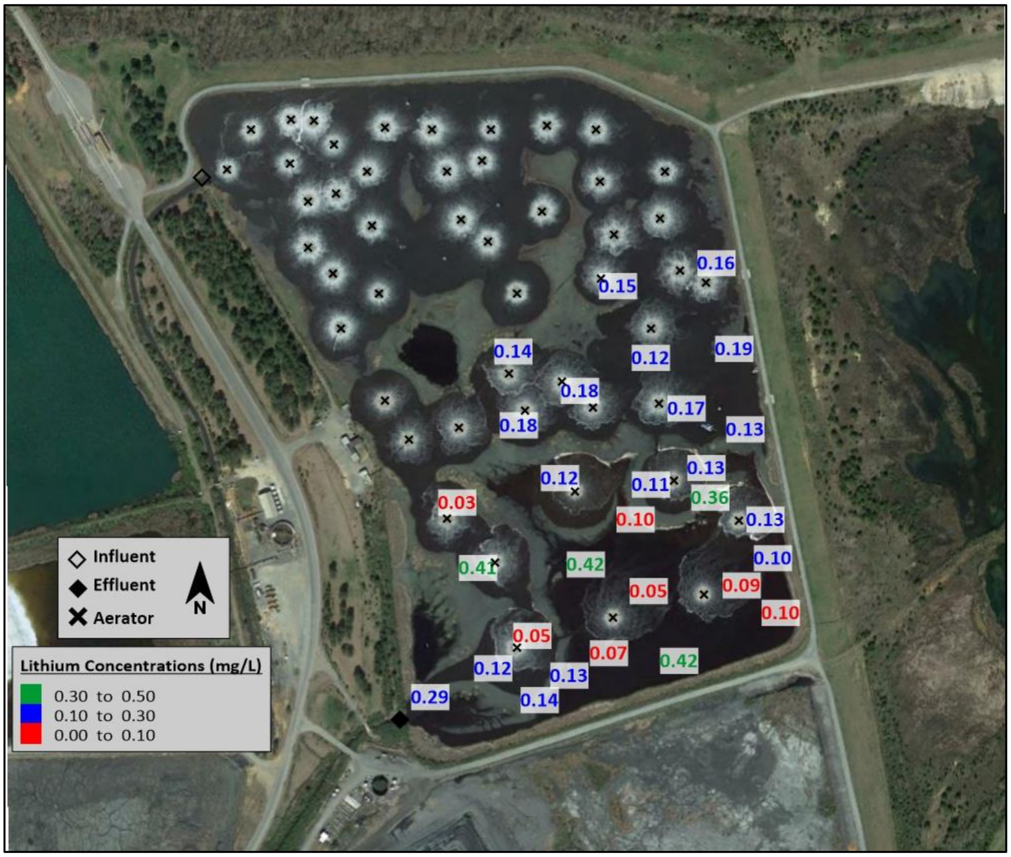


Figure 10: 24 hr lithium profile aerial overlay



Appendix A: Aerial image of the WWTS

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APPENDIX C – 1998 TECHNICAL SUPPORT DOCUMENT FOR THE EVALUATION OF THOROUGHLY MIXED BIOLOGICAL TREATMENT UNITS

11/98

Technical Support Document for Evaluation of Thoroughly Mixed Biological Treatment Units

I. Overview and Purpose

This document is intended to provide information to assist anyone who needs to determine whether a biological treatment unit meets the definition of an "enhanced biological treatment system or enhanced biological treatment process" for the purpose of using certain compliance demonstration provisions in 40 CFR part 63, subpart G. Potential users of this document include owners and operators of sources subject to 40 CFR part 63, subpart G as well as enforcement personnel evaluating whether a specific biological treatment process meets the criteria in the definition. It is therefore assumed that readers of this document are familiar with the requirements of subpart G for treatment of wastewater and consequently those requirements are not restated in this document. This information is intended for clarification purposes only, does not constitute final agency action, and cannot be relied upon to create any rights enforceable by any party.

The purpose of this document is to provide technical support and procedures to determine whether a biological treatment unit meets the criteria for being considered a "thoroughly mixed treatment unit" within the meaning of the enhanced biological treatment process definition in 40 CFR 63.111. The objectives of these evaluation procedures are to determine whether the entering wastewater and recycled biomass are quickly dispersed throughout the unit and whether the unit's design would avoid volatilization of the compounds of concern prior to efficient biodegradation. Several alternative approaches are presented for determining whether a biological treatment process is "thoroughly mixed." All of these procedures are considered to provide equally acceptable assessments and no one procedure is considered to take precedence over another. For example, tracer testing does not take precedence over a system design evaluation as described in this document. These evaluation procedures have been designed to allow, to the extent reasonable, the use of existing information and to minimize the need to develop new information to make the determination. It is recommended, however, that in cases where sufficient information is not available to make an unambiguous determination that readers should consider developing additional information to resolve the uncertainty.

II. Background

Subpart G provides two easier compliance demonstration options for activated sludge systems that meet the definition of an "enhanced biological treatment system or enhanced biological treatment process." First, §63.145(h)(1) provides an exemption from performance evaluation for an "enhanced biological treatment system or enhanced biological treatment process" that is used to control wastewater streams containing regulated compounds on list 1 in table 36 to subpart G. Second, if a system meets the definition of "enhanced biological treatment system or enhanced biological treatment process" and is used to treat wastewater containing compounds on list 1 and list 2, §63.145 (h)(2) (i) allows use of a simplified performance demonstration. The performance demonstration is considered to be easier because it may be limited to determining the first order biodegradation constant (K1) for the list 2 compounds. Section 63.145(h)(2)(i) allows the owner/operator to use the default K1s for enhanced biological treatment systems for the list 1 compounds that are provided in table 37 to subpart G.

Subpart G, in §63.111, defines "enhanced biological treatment system or enhanced biological treatment process" as:

> <u>Enhanced biological treatment system or enhanced biological treatment process</u> means an aerated, thoroughly mixed treatment unit(s) that contains biomass suspended in water followed by a clarifier that removes biomass from the treated water and recycles recovered biomass to the aeration unit. The mixed liquor volatile suspended solids (biomass) is greater than 1 kilogram per cubic meter throughout each aeration unit. The biomass is suspended and aerated in the water of the aeration unit(s) by either submerged air flow or mechanical agitation. A thoroughly mixed treatment unit is a unit that is designed and operated to approach or achieve uniform biomass distribution and organic compound concentration throughout the aeration unit by quickly dispersing the recycled biomass and the wastewater entering the unit.

The EPA's intent is that this definition reflect the modeling that was used, in part, as the basis for the decision (1) to exempt certain systems treating list 1 compounds from the requirement to determine the fraction biodegraded (Fbio) and (2) to allow the easier procedures for determining Fbio for systems meeting the definition but treating list 1 and 2 compounds. Important features of this definition are that biomass is recycled, the biomass approaches or achieves a state of being suspended uniformly throughout each aeration unit, the biomass concentration is not less than 1 kilogram/cubic meter, and that influent materials are rapidly dispersed throughout the unit. This last characteristic is one of the key design criteria for ensuring that the list 1 compounds are efficiently biodegraded in the biological treatment unit prior to the opportunity for significant volatilization to the atmosphere. Consequently, the criteria and procedures provided in this document for determining whether a biological treatment unit can be considered a "thoroughly mixed treatment unit" are based on evaluating the rate of mixing relative to the rate of stripping or volatilization.

III. Design Characteristics that Influence Mixing Time

This section describes the characteristics of units that are considered to contribute to good mixing in units approaching the continuous flow stirred tank reactor configuration resulting in optimum biodegradation as opposed to volatilization. Characteristics that are of concern for good mixing are also discussed in this section.

Biomass separation and agitation are two characteristics that require attention for the operation of a successful activated sludge system. The system should be designed or operated so that biomass separation occurs exterior to the aeration system (e.g., secondary clarifier with return of separated biomass to the aeration unit). In the design of the system, there are no zones that have no agitation (quiescent zones in the air emission models); however, real systems may as a practical matter, be found to have small insignificant stagnant zones. Even with such stagnant zones, there is enough mixing throughout the reactor to support suspension such that there is no significant accumulation of biomass on the bottom or sides of the aeration unit. With insufficient mixing, biomass can accumulate at the unit floor. Symptoms of this effect include biomass layers, low dissolved oxygen or anaerobic decay at the base of the floor in these zones, and less biomass generation in the system than is theoretically expected.

Baffles reduce mixing in the unit as a whole and the presence of internal baffles suggests deliberate control and restriction of mixing. Baffles can be intentionally included when designing a plug flow system; however, the absence of baffles does not necessarily indicate a well mixed system.

Thoroughly mixed units do not have a high length to width ratio. Back-mixing in biological treatment units depends on the length to width ratio, the dispersion characteristics, and the retention time in the reactor. Long units are more difficult to mix uniformly. Generally, a length to width ratio of four to one, or greater, is considered a high ratio. Thoroughly mixed systems would typically have a length to width ratio less than 4:1. Vivona (1983) states that plug flow sizing would be based on a length to width ratio of 4:1 to 12:1 .

Thoroughly mixed units are aerated substantially uniformly across the surface of the unit. Aeration that is greater near the inlet of the unit suggests a design for non-uniformity. Non-uniform mixing could cause a greater oxygen demand near the inlet. This would imply that the inlet loading is not distributed throughout the unit and significant volatilization may occur prior to efficient biodegradation.

Quiescent zones separating agitated zones may or may not be well-mixed . For example, surface units are well mixed and uniform within the agitation zone around each surface aerator, but the aeration unit as a whole may not be well mixed throughout the entire unit. Units designed so that the wastewater flows sequentially from one aeration unit to another may be considered plug flow. This flow in series may be determined by inspection or by tracer testing and observing the path of the tracer.

Examples of design features that may result in poor mixing or dispersion of the entering wastewater throughout the aeration unit are listed in Table 1. There were 2 main factors associated with the selection of the specifications in Table 1: (1) quick dispersion and thorough mixing and (2) volatilization prior to biodegradation. The two factors are interrelated in that quick dispersion and thorough mixing must occur prior to significant volatilization of the compounds of concern for the system to achieve the required destruction through biodegradation. Certain design characteristics may lead to problems with respect to these factors. Table 1 lists these factors.

IV. Procedures for Evaluating Mixing Performance

A. Overview of procedure

Figure 1 presents a logic flow diagram of the suggested approach for determining whether a unit meets the definition of "enhanced biological treatment system or enhanced biological treatment process." The determination consists of a four-step process that may be terminated at any point or continued through to conducting an evaluation of the mixing within the aeration unit. The process was designed this way to allow early elimination of any unit unlikely to be considered an "enhanced biological treatment system or enhanced biological treatment process."

The first step in any assessment should be to see if the unit is obviously ineligible because it does not meet criteria such as recycling of biomass or having a biomass concentration of greater than or equal to 1 kg/ m^3 MLVSS. If the unit does not meet these basic criteria, its performance would have to be evaluated using the procedures in appendix C to part 63.

The second step is to see if the unit has any of the characteristics listed in Table 1, which lists design characteristics that may result in a system that is not thoroughly mixed. If the answer to this question is yes, it is suggested that readers consider using the procedures in appendix C to part 63 and subdividing the unit into a series of zones that have uniform characteristics within each zone to determine performance instead of proceeding to the next step in the determination of mixing performance. If the reader wishes to continue with the determination of mixing performance, the reader should proceed to step four and follow one of the three procedures for determining mixing in the unit.

The third step is to refer to Table 2 to see if the unit has one of the design characteristics in each of the parameter specifications for reactor shape, depth, aerator type, aeration equipment location, and effluent outlet, number 1 and 2 or 3 of the mixing parameter specifications, and all of the inlet parameter specifications. Meeting the Table 2 design characteristics will result in a system that can be considered thoroughly mixed. If the system does meet these requirements then it is considered to meet the criteria of the definition and no further evaluation is necessary. It should be recognized that Table 2 lists design characteristics of a biological unit designed to minimize air emissions and that not all enhanced biological treatment systems will necessarily meet all of these design criteria. The EPA intends that Table 2 reflect design characteristics of only those units that are clearly thoroughly mixed. The fact that a biological treatment system does not meet all the design characteristics in Table 2 should not be interpreted as implying that the system is not thoroughly mixed as discussed in section II or that it will not achieve good biodegradation. It only means that it is necessary to proceed with the next step in the evaluation.

The fourth step in the evaluation process is to evaluate mixing performance using any one of the three procedures described in this document and complete the appropriate calculation forms for the procedure. The three procedures are design evaluation, tracer studies, and in–basin measurements. As previously stated, all of these procedures are considered to provide equally acceptable assessments and no one procedure is considered to take precedence over another. Selection of the procedure will depend on the availability of information, the relative ease of obtaining the necessary information, and/or personal preferences. The time to achieve complete mixing in an enhanced biological treatment system should be substantially less than both the time to air strip chlorobenzene from the system and the retention time of the waste in the system. The following sections B, C, and D describe an overview of procedures for comparing the mixing time to the time of air stripping and the retention time.

B. Mixing time from design evaluation

Procedures are supplied for calculating mixing time in submerged aeration units, surface aeration units, and jet aeration units. The mixing time determined in each approach estimates the time to achieve 95% mixing. Therefore, even though different procedures are used, they are all on the same basis.

1. Submerged aeration biological treatment units

Use Form 1 to estimate the dispersion coefficient for spiral flow aeration systems by the method of Fugii or use the default value of 0.068 m^2/s (Chambers). Next, use Form 2 to Calculate the value of u and L from the mean velocity and length of the aeration unit; then, use those values to calculate the dispersion number (D/uL). Form 3 is used to estimate the 95% mixing time from the dispersion number and using dispersion theory (Levenspiel). This 95% mixing time is the theoretical time to reach 95% of the maximum peak concentration in the unit. Calculate the 50% stripping time of chlorobenzene (the time required to strip 50% of the chlorobenzene in the aeration unit without biodegradation, also known as the stripping half-life) or by the provided estimation forms (Complete Form 4 and supporting forms). Calculate the ratio of the 95% mixing time to the 50% stripping time of chlorobenzene. Form 5 is used to compare 1) mixing time and 50% stripping time ratio, and 2) the mixing time-retention time ratio to the target parameters. Are these two ratios less than the target ratios? If the answer is yes, then the unit would be considered thoroughly mixed.

2. Surface aeration and submerged jet aeration biological treatment units

Obtain the pumping capacity of the aerators from the supplier or from an accurate correlation for the system. Calculate the turnover time as the ratio of the aeration unit volume to the volumetric pumping capacity. Use Form 9 to calculate the mixing time as five times the turnover time. Calculate the 50% stripping time of chlorobenzene by WATER8 (or the most recent update to this model) or by the provided estimation forms (Complete Form 4 and supporting forms). Calculate the ratio of the 95% mixing time to the 50% stripping time of chlorobenzene. Form 5 is used to compare 1) mixing time and 50% stripping time ratio, and 2) the mixing time-retention time ratio to the target parameters. Are these two ratios less than the target ratios? If the answer is yes, then the unit would be considered thoroughly mixed.

C. Mixing time from tracer test data

This method is based on measurement of a chemical tracer added to the influent as a pulse dose to demonstrate that the aeration unit of the biological treatment system is back-mixed to a degree that approaches the mixing characteristics of a theoretical completely back-mixed reactor. Tracer studies (Levenspiel) are often performed to determine the residence time distribution (RTD) of a reactor to compare with the theoretical retention time based on the reactor volume and the wastewater flow rate. Such studies are typically conducted before a unit is placed in service or returned to service in order to determine if the mixing and/or aeration systems are functioning in accordance with the design specifications. Tracer data from a RTD study will usually be suitable for use with the calculation procedures in this document for determining whether or not a biological treatment unit is sufficiently back-mixed to be considered a "thoroughly mixed treatment unit." Discussions of tracer studies can be found in references 4 through 8.

The tracer study can be performed with or without the presence of activated sludge in the unit. Any chemical tracer can be used that is not biodegradable and does not adsorb significantly to suspended solids. Examples of acceptable tracers include lithium chloride, rhodamine WT and dextran blue.

The tracer study is conducted by rapidly introducing a predetermined quantity of the tracer as a spike or step change in target compound concentration into the influent to the aeration unit. If the tracer can not be added to the influent because of limited access, it can be added to the aeration unit directly at a location near the influent. Measure the concentrations of the tracer in the effluent as a function of time starting at the time of release of the tracer. Measurements of the tracer in the effluent can be performed with a continuous direct–reading instrument or can be performed by collecting grab samples at closely–spaced time intervals and measuring the tracer concentration in the laboratory.

Determine the mixing time as the time to reach 95% of the maximum peak tracer concentration in the effluent. One method to evaluate the tracer data is to plot the effluent tracer concentration data as the dependent variable (y axis) on a graph and the elapsed time as the independent variable (x axis). Determine the time where the curve reaches 95% of the peak concentration in the effluent. If the tracer was added as a step change input, the data could be analyzed by plotting concentration as the dependent variable (y axis) and inverse time as the independent variable (x axis) and extrapolating back to the y axis intercept for long time periods.

To determine if the biological treatment unit approaches the mixing performance of a thoroughly mixed reactor, first complete Form 7 to document the 95% mixing time determination. Next, Form 5 is completed to compare the 95% mixing time to the stripping time and the retention time. To complete Form 5, it is necessary to calculate the 50% stripping time of chlorobenzene by completing Form 4 and the supporting forms. Calculate the ratio of the 95% mixing time to the 50% stripping time of chlorobenzene. Form 5 is used to compare 1) mixing time and 50% stripping time ratio, and 2) the mixing time-retention time ratio to the target parameters. Are these two ratios less than the target ratios? If the answer is yes, then the unit would be considered thoroughly mixed. If the ratio on line 4 is less than or equal to the target ratio on line 5 and if the ratio on line 12 is less than or equal to the target ratio on line 13, then the biological treatment unit is considered to be a thoroughly mixed treatment unit.

D. Indicator Pollutant Testing

1. Description of procedure

This procedure is based on a statistical comparison of the concentration of an indicator parameter in the effluent (reactor exit) and the measured concentrations of this parameter in the aeration unit, all measured during the same time period. This procedure is used to evaluate the rate of mixing relative to the rate of loss by biodegradation or volatilization. This procedure is applicable to aeration units that have a single wastewater feed inlet or that split a wastewater feed among multiple inlets. This procedure is not applicable to aeration units in which different wastewater feeds are introduced separately through different inlets. If the concentrations of the indicator parameter in the effluent are statistically equivalent to the concentrations in the aeration units near the inlet at a 95% statistical significance level, then the aeration unit meets the criteria for a thoroughly mixed treatment unit (i.e., is back-mixed). Before conducting this procedure, you should confirm that there are no major variations in the flow rate and waste composition into the biological treatment system. In the case where the wastewater sent to the aeration unit is highly variable, it is recommended that the thoroughness of mixing be evaluated during a period of stable operating conditions or another procedure recommended in this document should be considered. If the variability of measured indicator concentrations is relatively great, the number of samples required to characterize the mixing characteristics of the aeration unit is so large that it is impractical to use this procedure. The steps in this procedure are described below.

Identify indicator parameter. An appropriate indicator parameter for this test is one that is being significantly biodegraded and not created by the biological treatment process. An appropriate indicator parameter is one that is measured in the influent with a high degree of confidence (greater than 99%) that the concentration is substantially greater than the concentration in the effluent. Examples of potential indicator parameters are: total organic carbon (TOC), chemical oxygen demand (COD), and specific volatile organic chemicals present in the wastewater. TOC and COD are not appropriate indicator parameters for wastewater containing significant quantities of compounds resistant to biodegradation, since the values of TOC and COD could be at constant values and may not be representative of the level of mixing . For example both a plug-flow reactor or a complete back-mix reactor with significant quantities of biodegradation resistant compounds could exhibit a constant level of TOC or COD; therefore, in this case the level of mixing as determined by the TOC/COD procedure for the plug-flow reactor could erroneously look the same as the level of mixing determined for the complete back-mix reactor. Conservative parameters such as total dissolved solids or chlorides are also not appropriate indicator parameters for this procedure since they are not expected to be removed either by biodegradation or volatilization. If a specific chemical is used as the indicator parameter then one of the more volatile primary constituents in the feed stream should be selected. An acceptable indicator parameter will be present in the inlet feed stream at much greater concentrations than after dispersion near the inlet of the aeration unit. The indicator parameter should be present in the effluent from the unit at a concentration that is above the quantitation limit of the approved analytical method used for the measurement.

Determine the sampling locations for the aeration unit. Three sampling locations shall be determined: the inlet, within the unit, and the exit. The inlet is sampled directly before entering the particular unit, and the exit is sampled directly at the outfall of the particular unit. The sample may be collected upstream provided conveyance is by closed pipe and no additional streams are added to the conveyance system. The sample within the unit will be taken as described in the following paragraph.

First determine the 50% stripping time of chlorobenzene by completing Form 4 and the supporting forms. Then use Form 6 to determine the maximum in unit sampling distance from the aeration unit inlet. This distance is determined from the 50% stripping time for chlorobenzene using the operating characteristics of the specific biological treatment process and the mean velocity flow of water through the aeration unit. Calculate the value of u as the mean velocity flow of water through this aeration unit using Form 6. Calculate the maximum sampling distance from the aeration unit inlet as the product of the 50% stripping time for chlorobenzene and the calculated value of u. Samples of the aeration unit contents should be taken at no greater distance from the inlet than this maximum sampling distance in order to avoid some of the interferences from potential volatilization losses. The success of sampling the unit with this method depends on an accurate sampling of the inlet stream after it mixes with the aeration unit contents. Sampling in the unit should be conducted in the flow path of the inlet stream after the inlet flow has an opportunity to mix with the unit contents. If the maximum sampling distance from the inlet as calculated using Form 6 is too close to the inlet for representative sampling of the mixing of the inlet with the unit contents, the lesser value of either ½ the distance to the closest aerator, a distance of 10 times the diameter of the wastewater inlet pipe , or 10 meters may be used as the alternative maximum sampling distance.   This alternative maximum sampling distance may also be used for sampling the unit near the aeration unit exit.

Collection and handling of samples.   A minimum of 3 grab samples should be collected from each of the following locations: (1) the influent to the biological treatment unit; (2) the effluent from the biological treatment unit; and (3) the aeration unit within the maximum sampling distance. The aeration unit samples shall be taken anywhere within the maximum sampling distance from the inlet. Note: these samples may be collected from the sides of the aeration unit. Measure the concentrations of the indicator parameter at each of these three locations. The aeration unit samples should be collected at a depth of 0.5 to 1.0 foot below the surface of the water. All samples shall be collected during the same 24 hour period, and each of the 3 sets of samples[1] should be collected to capture influent and effluent variability. If more than 3 samples are to be collected, then the sample collecting should be approximately equally spaced during the 24 hour period. The sets of influent and effluent samples shall be collected at time intervals separated by times roughly equal to 1/4 the hydraulic retention time (residence time). The aeration unit samples should be collected during the same time periods that the influent and effluent samples are collected. Grab samples should be collected with a device that can be opened beneath the water surface. Samples should be poured from the grab sampling device into sample bottles in a manner that will minimize volatilization of organic compounds.   Sufficient

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[1] More than 3 samples may be collected from any of the locations, if necessary.

hydrochloric acid (HCl) shall be added to each sample to reduce the pH to less than 2 to stop the biodegradation in the sample bottles. The samples shall be then refrigerated at 4° C until analysis.

Number of Samples. When the coefficient of variance[2] for sampling is large, it is difficult to demonstrate differences between sets of data, even if the differences are significant. One method for improving the accuracy of the determination of differences between concentrations in the unit and concentrations in the exit of the unit is to increase the number of data sets that is used in the comparison. The following list presents a recommended minimum number of sequential data sets that should be collected from the unit, based upon the measured coefficient of variance.

Coefficient of variance	minimum sets
10	3
15	4
20	6
30	9
40	12
50	15

Measurement of indicator parameter. All sample preservation, storage, and analyses shall be performed in accordance with the NPDES analytical procedures at 40 CFR part 136. Only analytes with approved 40 CFR part 136 methods shall be used as indicator parameters. All quality assurance/quality control requirements of the applicable method shall be followed.

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[2] The coefficient of variance is the ratio of the standard deviation of the sample mean to the sample mean, multiplied by 100.

2. Evaluation of the mixing

Form 8 is used to evaluate the indicator parameter for mixing time. Three sets of data are entered in the three columns of the form: inlet data, exit data, and unit data. Paired data are placed in each row of the table. For each column, the average and standard deviation are calculated. There are two different methods to evaluate the data for Form 8: (1) The Student's t-test procedure to demonstrate that the unit data and the exit data are not significantly different and (2) a correlation method for paired data. The correlation method shall be used when there is a significant time trend in the data.

First calculate the difference in the inlet average and the unit average. This difference should be large and positive relative to the unit average. If this difference is not large relative to the unit average, consider evaluating a different indicator parameter or using a different method to determine mixing time. Next, evaluate the trend characteristics of the paired data. If there is an obvious time trend (unit concentration significantly increasing with time, the exit concentration decreasing with time, or other trend) skip the Student's t-test and proceed to the correlation test.

To use the Student's t-test, calculate the difference in the unit average and the exit concentration. If this difference is negative (the exit has a higher average than the unit), then the unit has been demonstrated to be throughly mixed because there is no evidence that the unit has a higher concentration than is present in the exit concentration. If this difference is positive, then evaluate the appropriate number of degrees of freedom (equals 4 for 3 sets of paired data, 6 for 4 sets, and 8 for 5 sets). Look up the t-value for 95% confidence level, one-sided test with the appropriate number of degrees of freedom. Evaluate the test parameter as the following:

$$test \;=\; \frac{(\,C_{unit} - C_{exit}\,)}{\sqrt{\frac{(n_1 - 1)s_1^{\,2} + (n_2 - 1)s_2^{\,2}}{n_1 + n_2 + 1}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

σ is the standard deviation

n is the number of samples

C_{unit} is the unit concentration

C_{exit} is the exit concentration

1 refers to the unit

2 refers to the exit

If the test parameter is greater than the t-value for the 95% confidence level, then the unit concentrations are significantly greater than the exit concentrations, and the unit can not be considered well-mixed. If the test parameter is equal to or less than the t-value for the 95% confidence level, the unit can be considered well-mixed.

To use the correlation method, assume a linear correlation with a zero intercept. Use the least squares method to calculate the slope and standard error of the correlation. Subtract 1.00 from the slope and divide this result by the standard error. If this ratio is negative, use the absolute value of the ratio. Evaluate the appropriate number of degrees of freedom (equals 4 for 3 sets of paired data, 6 for 4 sets, and 8 for 5 sets). Look up the z value for 95% confidence level, one-sided test with the appropriate number of degrees of freedom. If the test parameter is equal to or less than the z value for the 95% confidence level, the unit can be considered thoroughly mixed . If the test parameter is greater than the z value for the 95% confidence level, the unit can not be considered thoroughly mixed.

V. References

1. Fujie, J., Fermentation Technology. Vol. 61, No.3, pp. 295-304, 1983.

2. Chambers, Wat. Sci. Tech. Vol. 20, No. 4/5, pp.121-132, 1988.

3. Grady, C. P. Leslie and Henry C. Lim, Biological Wastewater Treatment: Theory and Applications, p 658, Marcel Dekker, Inc., 1980.

4. Smith, J. M., Chemical Engineering Kinetics. McGraw-Hill, Inc., New York, 1981.

5. Levenspiel, Octave Chemical Reaction Engineering. John Wiley and Sons, Inc., New York, 1962.

6. Boyle, Wat. Sci. Tech. Vol. 16, pp. 91-106, 1984, co-author H. J. Campbell, Jr.

7. Slade, Appita J. Vol. 44, No. 1, pp. 25-28,1991.

8. Smith, Ecological Modeling. Vol. 69, pp. 267-285,1993

9. Battaglia, Wat. Res. Vol. 27, No. 2, pp. 337-341,1993

10. Jimenez, Wat. Res. Vol. 22, No. 10, pp. 1253-1257,1988

11. Frederick, Wat. Sci. Tech. Vol. 33, No. 7, pp. 49-56, 1996

12. Bode, Wat. Sci. Tech. Vol. 17, pp. 197-208, 1985

13. Marecos do Monte, Wat. Sci. Tech. Vol. 19, No. 12, pp. 219-227, 1987

14. Grijspeerdt, Environmental Technology, Vol. 15, pp. 483-488, 1994

Figure 1. Steps to Determine Biological Treatment Demonstration Path

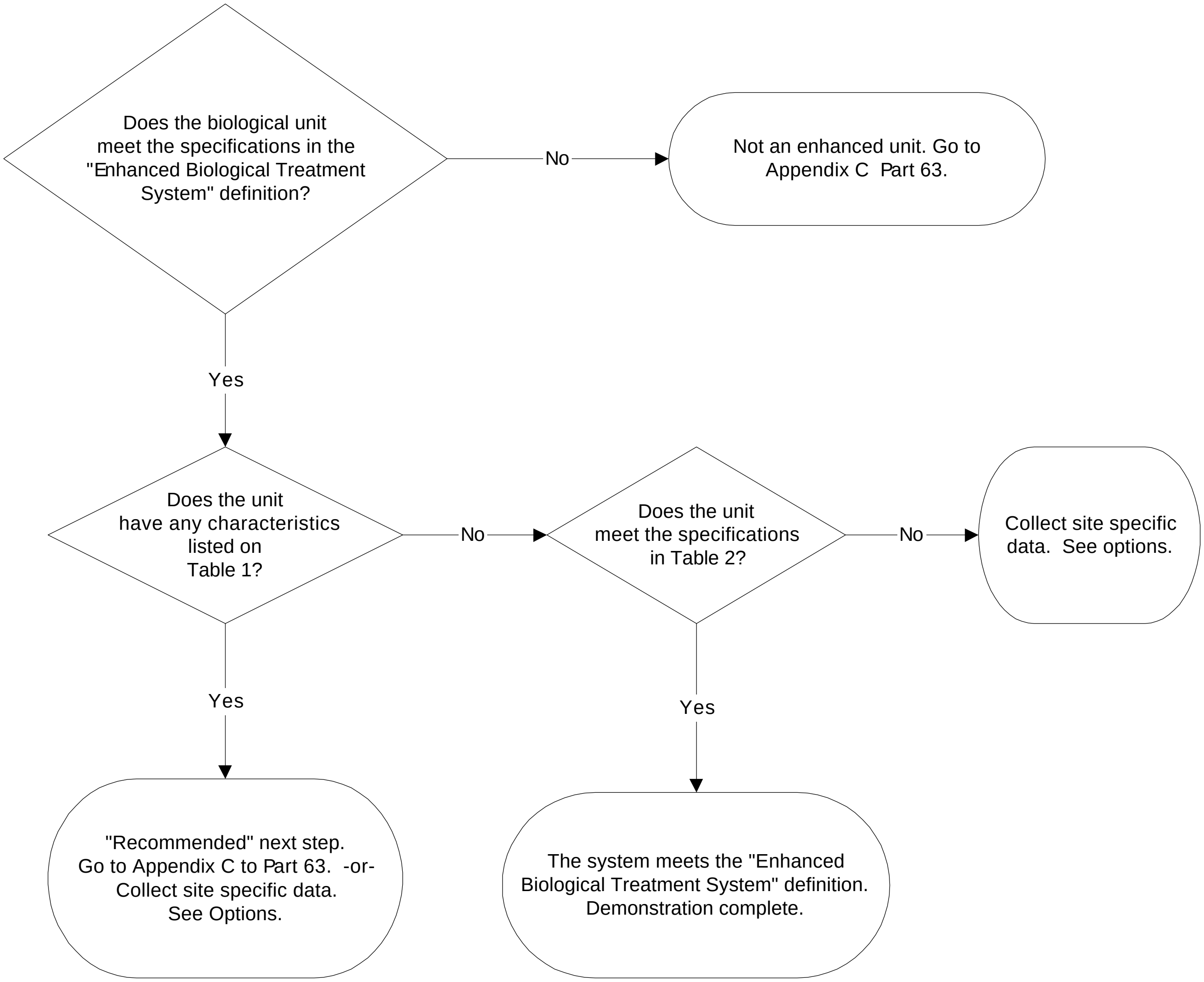


Table 1 Characteristics Indicative That a Biological Treatment System May Not Be Thoroughly Mixed *

Parameter	**Specifications**
Reactor Shape	1. Very long length to width ratio (greater than 4:1) with inlet at one end (width side) and outlet at opposite end. 2. System is designed or operated with biomass separation within the aeration system.
Mixing	1. Entering recycled biomass and wastewater are not quickly dispersed. Indications of poor dispersion may be: • visual indication of solids settling, • plume with visual differences in color or solids level. 2. The unit has baffles or partitions within the tank, or aeration units are operated in series. 3. Mixing does not occur between inlet and outlet.
Aeration Equipment	1. Rolling or tapered aeration. 2. Aerators (submerged or surface aerators) located such that there are zones that are not mixed (i.e., relatively stagnant or dead zones). 3. Significant distance between aeration equipment such that solids settling results.
Inlet	1. Wastewater inlet is located relative to the surface aerator such that the entering wastewater is exposed to the air before significant mixing. 2. Inlet located such that wastewater enters the unit at a relatively stagnant zone. 3. Inlet located above the surface, at the surface, or near the surface.
Effluent Outlet	Located such that short circuiting occurs between inlet and outlet.

* Biological systems must also meet the requirements in the “Enhanced Biological Treatment System” definition. Any one of the characteristics listed above would suggest that the biological unit may not meet the requirement to quickly disperse the recycled biomass and wastewater entering the unit to approach or achieve the uniform biomass distribution and organic compound concentration throughout the aeration unit.

Table 2 Thoroughly Mixed Treatment System Characteristics [1]

Parameter	**Specifications**
Reactor Shape	1. Circular Tank - No criteria, or 2. Rectangular Tank - Small length/width ratio (3:1 or less).
Depth	1. Diffused aeration systems - 15 ft minimum[2], or 2. Jet aeration system - Used in deep tanks (25 ft or greater)[2]. May be supplemented by mechanically driven mixing only at lower zone of tank.
Aerator Type	1. Diffused aeration - Well operated (unplugged) subsurface fine bubble diffused (Porous Diffusers) system such as plate, dome, disc, tube[2]. 2. Jet aeration system - per manufacturers criteria, with subsurface flow only.
Aeration equipment location	1. Diffused Systems - Full Floor Coverage (indicated by uniform bubble distribution on surface of basin). 2. Jet Systems - Liquid pumping with air diffusion occurs at bottom of tank.
Mixing	1. Unit does <u>not</u> have baffles or partitions. 2. Jet aeration system - Pumping rate should be > 5 times the entering wastewater and recycle flow rate. 3. Diffused system air flow rate > 10 scfm/1000ft^3
Inlet	1. Multiple inlet points or inlet located near point of significant mixing. 2. Submerged inlet.
Effluent Outlet	Located such that short circuiting does <u>not</u> occur between inlet and outlet.

1 Biological systems must also meet the requirements in the "Enhanced Biological Treatment System" definition.

2 Metcalfe and Eddy, Inc.

Form 1

Form for the Estimation of Eddy Diffusivity with Submerged Aeration

Reference Fujie, 1983. Only use this form for spiral circulation due to aeration. Sprial circulation is usually found only in municipal plants. For more information, consult a reference book such as Metcalf and Eddy or WEF Aeration Manual.

	Name of site	
H	depth of unit (m)	1
W	width of unit (m) (area/diameter for circular tanks)	2
L	LENGTH [L] distance from inlet to reactor exit. (m) Represents the mean path of actual flow from inlet to exit. Can use diameter for circular tank. If the flow is across the width of a rectangular unit, enter the width here.	3
Q	Flow rate water (m3/s)	4
h	diffuser depth (m)	5
A	Aeration rate per tank (m3 air/m3 liquid per h), volumetric rate of air divided by the volume of the unit.	6
	for fine bubble system enter 1 on line 8.	7

CALCULATION OF EDDY DIFFUSIVITY

Ugc	sup.air feed rate (cm/s) A*H/36	8
theta	h*100*Ugc*(h/H)^0.5*(H/W)^0.333	9
m	value from Table I.1 (see below)	10
a	value from Table I.1 (see below)	11
Uts	a*(theta^m) (cm/s)	12
Utsc	Uts/100*3600 (m/h)	13
lamda	0.0115*(1+H/L)^(-3)*Ugc^-0.34	14
Ut	Q*3600/W/H	15
E	diffusivity (m2/h) lamda*Utsc*(H+W)	16
D	(m2/s) E/3600	17

Table I.1

	m	a	
theta<=20	0.64	7	fine
theta>20	0.46	12	
theta<=20	0.78	3.5	coarse
theta>20	0.56	4.9	

Form 2

DATA FORM FOR THE CALCULATION OF THE DISPERSION NUMBER FROM A SUBMERGED AERATION UNIT

NAME OF THE FACILITY for site specific dispersion number determination

VOLUME OF REACTOR (m3)	1	
FLOW RATE of wastewater treated in the unit (m3/s)	2	
FLOW RATE OF RECYCLE (m3/s)	3	
LENGTH [L] distance from inlet to reactor exit. (m) Represents the mean path of actual flow from inlet to exit. Can use diameter for circular tank. If the flow is across the width of a rectangular unit, enter the width here.	4	
EDDY DIFFUSIVITY [D] from Form 1 line 17 if spiral agitation or default value of 0.068 (m2/s)	5	

CALCULATION OF THE DISPERSION NUMBER

TOTAL INLET FLOW (m3/s) Add the number on line 2 to the number on line 3. Enter the results here.	6	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 1 by the number on line 6. Enter the results hers.	7	
MEAN VELOCITY [U] (m/s) Divide the number on line 4 by the number on line 7. Enter the results here.	8	
DISPERSION NUMBER [D/UL] Divide the number on line 5 by the product of the number on line 8 and the number on line 4. Enter the results here.	9	

DATA FORM FOR THE EVALUATION OF THE MIXING TIME BASED UPON A DISPERSION NUMBER FOR SUBMERGED AERATION SYSTEMS.

NAME OF THE FACILITY for site specific biorate determination

DISPERSION NUMBER From Form 2, line 9. | 1 |
RETENTION TIME IN THE REACTOR (s) From Form 2, line 7. | 2 |

Value of dispersion number	mixing time ratio
0.025	0.85
0.1	0.8
0.15	0.7
0.2	0.6
0.25	0.514
0.5	0.330
1	0.199
2	0.107
4	0.042
6	0.013
0.300	0.459

CALCULATION OF THE ESTIMATE OF THE MIXING TIME

In the above table, look up the mixing time ratio using the value of the dispersion number on line 1. Enter this mixing time ratio on line 3. These values were obtained from Monte Carlo simulations of dispersion within circular tanks. | 3 |

MIXING TIME (s) multiply the number on line 2 by the number on line 3. | 4 |

equation for estimating the mixing time= =IF x>6 use 0.01 else use 0.314375*(x^-0.5) -0.114921
Use this equation if the dispersion number is not within the range of the table.

DATA FORM FOR THE CALCULATION OF THE STRIPPING TIME FOR CHLOROBENZENE IN A BIOREACTOR

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		Chlorobenzene
AREA OF REACTOR SURFACE (m2)	1	
VOLUME OF REACTOR (m3)	2	
K, mass transfer coefficient (m/s) from Form 12, line F.	3	
Equivalent mass transfer coefficient (m/s) from Form 10, Line 6.	4	
Total Equivalent KL (m/s). sum of line 3 and line 4. Line 3 represents the contribution from surface volatilization and line 4 represents the contribution from volatilization into subsurface bubbles.	5	

CALCULATION OF THE ESTIMATE OF THE STRIPPING TIME

STRIPPING TIME (s) Divide the number on line 2 by the product of the number on line 1 and the number on line 5.	6	
50% STRIPPING TIME (s) Multiply the number on line 6 by 0.693.	7	

DATA FORM FOR THE COMPARISON OF THE MIXING TIME TO THE STRIPPING TIME AND THE RETENTION TIME IN THE BIOREACTOR

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific mixing ratio determination		Chlorobenzene
MIXING TIME (s) From Form 3 line 4, or from Form 7 line 8, or from Form 9 line 12.	1	
Method of obtaining the mixing time	2	
50% STRIPPING TIME (s) From Form 4, line 7.	3	

COMPARISON OF THE MIXING TIME TO THE STRIPPING TIME

MIXING TIME-STRIPPING TIME RATIO Divide the number on line 1 by the number on line 3.	4	
Required target ratio	5	0.33
Is the stripping time ratio less than the target ratio?	6	

COMPARISON OF THE MIXING TIME TO THE RETENTION TIME

VOLUME OF REACTOR (m3)	7	
FLOW RATE of wastewater treated in the unit (m3/s)	8	
FLOW RATE OF RECYCLE in the full-scale bioreactor (m3/s)	9	
TOTAL INLET FLOW (m3/s) Add the number on line 8 to the number on line 9. Enter the results here.	10	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 7 by the number on line 10. Enter the results hers.	11	
MIXING TIME RETENTION RATIO Divide the number on line 1 by the number on line 11.	12	
Required target ratio	13	0.33
Is the retention time ratio less than the target ratio?	14	

DATA FORM FOR THE EVALUATION OF THE SAMPLING DISTANCE LIMITS

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific mixing ratio determination		Chlorobenzene
STRIPPING TIME (s) From Form 4, line 6.	1	
VOLUME OF REACTOR (m3)	2	
FLOW RATE of wastewater treated in the unit (m3/s)	3	
FLOW RATE OF RECYCLE in the full-scale bioreactor (m3/s)	4	
LENGTH [L] distance from inlet to reactor exit. (m) Represents the mean path of actual flow from inlet to exit. Can use diameter for circular tank. If the flow is across the width of a rectangular unit, enter the width here.	5	

CALCULATION OF THE SAMPLING LIMIT

TOTAL INLET FLOW (m3/s) Add the number on line 3 to the number on line 4 Enter the results here.	6	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 2 by the number on line 6. Enter the results hers.	7	
MEAN VELOCITY [U] (m/s) Divide the number on line 5 by the number on line 7. Enter the results here.	8	
SAMPLING DISTANCE LIMIT (m) multiply the number on line 1 by the number on line 8. Enter the results here.	9	

DATA FORM FOR THE SUMMARY OF TRACER RESULTS

This form is based upon the concept that a tracer is placed in the inlet of a reactor and the concentrations in the exit of the reactor are measured as a function of time. Well-mixed systems will not have bypassing and the tracer curve may be analyzed to demonstrate that the retention time in the reactor is approximately the same as the theoretical value. Verbal descriptions are requested below to assist in the interpretation of the data.

NAME OF THE FACILITY for site specific tracer testing

COMPOUND used for the tracer evaluation

Attach a graph of the concentration of tracer vs. time and a short general description of the tracer test. The details of the test report should be available for inspection.

Location of tracer release (general verbal description, such as inlet on the side of a circular tank with the exit on the opposite side)	1	
Location of tracer measurement (such as in exit of circular tank)	2	
FLOW RATE of wastewater treated in the unit (m3/s)	3	
FLOW RATE OF RECYCLE in the full-scale bioreactor (m3/s)	4	
VOLUME OF REACTOR (m)	5	
location of internal pumping inlet (draft tube of surface aerator, inlet of jet mixer, location of submerged agitators)	6	

Time of tracer concentration peak on graph (s)	7	
Time to reach 95% of tracer concentration peak on graph (s)	8	

CALCULATION OF THE MIXING TIME RATIO

TOTAL INLET FLOW (m3/s) Add the number on line 3 to the number on line 4 Enter the results here.	9	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 5 by the number on line 9. Enter the results here.	10	
Mixing time ratio. Divide the number on line 8 by the number on line 10 and enter the results here.	11	
Target ratio for mixing time determination	12	0.33
Is the mixing time ratio less than the target ratio?	13	

Lines 9 through 13 are optional if the mixing time of line 8 is transferred to Form 5 line 1.

Form 8

FORM FOR THE EVALUATION OF INDICATOR PARAMETER MIXING

concentrations in the biological treatment unit

	inlet	exit	unit
sum of data			
N, number			
average, sum/ number			
SD			
CV			

Method 1. Difference in inlet average and unit

Difference in unit and exit D

Degrees of freedom Nunit + Nexit -2

T value at 95% confidence level, 1 side test

Sw SQRT((SDunit^2*(Nunit-1)+Sdexit^2*(Nexit-1))/(Nunit+Nexit-2))

test parameter -D/Sw /SQRT(1/Nexit+1/Nunit)

Is the test parameter greater than the t value?

use t test if no, suggests well mixed.

reject alternative hypothesis

accept null hypothesis, well mixed Well mixed?

Method 2. Slope equivalency method

Slope of the correlation between unit and exit concentrations.

Intercept of the correlation

standard error

r squared

difference, absolute value of (slope - 1)

ratio, difference divided by the standard error

z value at 95% confidence level, 1 side test

Is the ratio greater than the z value?

Is the slope equivalent to 1? (yes if the ratio is not greater than z value)

Can the unit be considered well mixed? (yes if the ratio is equivalent to 1)

Form 9

DATA FORM FOR THE MIXING TIME FROM PUMPING RATE

Obtain the pump rate specifications for surface aerators from the equipment manufacturer.

NAME OF THE FACILITY for site specific pumping rate evaluation ☐

Type of mixing equipment 1	1	
number of units of equipment 1	2	
capacity of pumping unit 1 (m3/s)	3	
Type of mixing equipment 2	4	
number of units of equipment 2	5	
capacity of pumping unit 2 (m3/s)	6	
Volume of biological reactor (m3)	7	

CALCULATION OF THE MIXING TIME

TOTAL FLOW 1 (m3/s) Multiply the number on line 2 by the number on line 3 Enter the results here.	8	
TOTAL FLOW 2 (m3/s) Multiply the number on line 5 by the number on line 6 Enter the results here.	9	
TOTAL FLOW (m3/s) Add the number on line 8 and the number on line 9. Enter the results here.	10	
Recirculation time. Divide the number on line 7 by the number on line 10.	11	
Mixing time (s). Multiply the number on line 11 by the number 5.	12	

DATA FORM FOR THE ESTIMATION OF THE EQUIVALENT KL FOR A SUBMERGED AIR SYSTEM

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		Chlorobenzene
VENT RATE of total gas leaving the unit (G, m3/s)	1	
TEMPERATURE of the liquid in the unit (deg. C)	2	
ESTIMATE OF Henry's law constant (H, g/m3 in gas / g/m3 in liquid). Obtained from Form 13 line 7.	3	
AREA OF REACTOR (m2)	4	

CALCULATION OF THE ESTIMATE OF EQUIVALENT KL FROM SUBMERGED AIR

[H G] ESTIMATE (m3/s) Multiply the number on line 1 by the number on line 3. Enter the results here.	5	
EQUIVALENT KL. Divide the number on line 5 by the number on line 4. Enter the results on line 6.	6	

FORM FOR CALCULATING THE MASS TRANSFER COEFFICIENT FOR A QUIESCENT SURFACE IMPOUNDMENT

FACILITY NAME for site specific biorate determination	1	
COMPOUND for site specific biorate determination	2	Chlorobenzene

Input values

Enter the following:

F - Impoundment fetch (m)	3	
D - Impoundment depth (m)	4	
U10 - Windspeed 10 m above liquid surface (m/s)	5	
Dw - Diffusivity of compound in water (cm2/s)	6	
Dether - Diffusivity of ether in water (cm2/s)	7	
µG - Viscosity of air, (g/cm-s)	8	
G - Density of air, (g/cm3)	9	
Da - Diffusivity of compound in air, (cm2/s)	10	
A - Area of impoundment, (m2)	11	
H - Henry's law constant, (atm-m3/g mol)	12	
R - Universal gas constant, (atm-m3/g mol. K)	13	
µL - Viscosity of water, (g/cm-s)	14	
L - Density of liquid, (g/cm3)	15	
T - Impoundment temperature, (C)	16	

Calculate the following:

Calculate F/D: 17

A. Calculate the liquid phase mass transfer coefficient, kL, using one of the following procedures, (m/s)

1 Where F/D < 14 and U10 > 3.25 m/s, use the following procedure from MacKay and Yeun:

Calculate the Schmidt number on the liquid side, ScL, as follows:
ScL = µL/ (L x Dw) 18

Calculate the friction velocity, U*, as follows, (m/s):
U* = 0.01 x U10(6.1 + 0.63 U10)^0.5 19

Where U* is > 0.3, calculate kL as follows:
kL = (1.0 x 10^-6) + (0.00341)U* x ScL^-0.5 20

Where U* is < 0.3, calculate kL as follows:
kL = (1.0 x 10^-6) + (0.0144)(U*)^2.2 x ScL^-0.5 21

2 For all other values of F/D and U10, calculate kL using the following procedure from Springer:

Where U10 is < 3.25 m/s, calculate kL as follows:

kL = 2.78 x 10^-6(Dw/Dether)^(2/3) 22 ☐

Where U10 is > 3.25 and 14 < F/D < 51.2, Calculate kL as follows:
kL = [2.605 x 10^-9(F/D) + 1.277 x 10^-7] U10^2 (Dw/Dether)^(2/3) 23 ☐

Where U10 > 3.25 m/s and F/D > 51.2, calculate kL as follows:
kL = (2.611 x 10^-7)U10^2 (Dw/Dether)^(2/3) 24 ☐

B. Calculate the gas phase mass transfer coefficient, kG, using the following procedure from MacKay and Matsasugu, (m/s):

Calculate the Schmidt number on the gas side, ScG, as follows: ScG =µG/(G x Da) 25 ☐

Calculate the effective diameter of the impoundment, de, as follows, (m):
de = (4A/3.14)^0.5 26 ☐

Calculate kG as follows, (m/s): kG = 0.00482 U10^0.78 ScG^-0.67 de^-0.11 27 ☐

C. Calculate the partition coefficient, Keq, as follows: Keq = H/[R(T+273)] 28 ☐

D. Calculate the overall mass transfer coefficient, Kq, as follows, (m/s):
1/Kq = 1/kL + 1/(Keq x kG) 29 ☐

Where the total impoundment surface is quiescent:
KL = Kq 30 ☐

Where a portion of the impoundment surface is turbulent, continue with Form 12.

Form 12

DATA FORM FOR CALCULATING THE MASS TRANSFER COEFFICIENT FOR AN AERATED SURFACE IMPOUNDMENT

Facility Name:
Waste Stream Compound: Chlorobenzene

Enter the following:

J - Oxygen transfer rating of surface aerator, (lb O2/hr-hp)
POWR - Total power to aerators, (hp)
T - Water temperature, (C)
Ot - Oxygen transfer correction factor
MWL - Molecular weight of liquid
area per agitator (M2)
At - Turbulent surface area of impoundment, (ft2)
(If unknown, use values from Table 1)
A - Total surface area of impoundment, (ft2)
rho L - Density of liquid, (lb/ft3)
Dw - Diffusivity of constituent in water, (cm2/s)
Do - Diffusivity of oxygen in water, (cm2/s)
d - Impeller diameter, (cm)
w - Rotational speed of impeller, (rad/s)
a - Density of air, (gm/cm3)
N - Number of aerators
gc - Gravitation constant, (lbm-ft/s2/lbf)
d* - Impeller diameter, (ft)
Da - Diffusivity of constituent in air, (cm2/s)
MWa - Molecular weight of air
R - Universal gas constant, (atm-m3/g mol. C)
H = Henry's law constant, (atm-m3/g mol)

Calculate the following:

A. Calculate the liquid phase mass transfer coefficient, kL, using the following Equation from Thibodeaux:,

kL =[8.22 x 10^-9 J (POWR)(1.024)^(T-20) Ot 10^6 MWL/(At x rhoL/62.37)]
(Dw/Do)^0.5, (m/s)

B. Calculate the gas phase mass transfer coefficient, kG, using the following procedure from Reinhardt:,

Calculate the viscosity of air, µa, as follows, (g/cm.s):
µa = 4.568 x 10^-7 T + 1.7209 x 10^-4

Calculate the Reynold's number as follows:
Re = d^2 w a/µa

Calculate power to impeller, PI, as follows, (ft.lbf/s):
PI = 0.85 (POWR) 550/N

Calculate the power number, p, as follows:
p = PI gc/(rho d*^5 w^3)

Calculate the Schmidt number, ScG, as follows:
ScG = µa/ (a x Da)

Calculate the Fronde number, Fr, as follows:
Fr = d* x w^2 /gc

Calculate kG as follows:
kG = 1.35 x 10^-7 Re^1.42 p^0.4 ScG^0.5 Fr^-0.21 Da MWa/d, (m/s)
if quiescent gas phase mass transfer coefficient is used, enter here else use above line.

C. Calculate the partition coefficient, Keq, as follows:
Keq = H/[R(T+273)]

D. Calculate the overall turbulent mass transfer coefficient, Kt, as follows, (m/s):
1/Kt = 1/kL + 1/(Keq x kG)

E. Calculate the quiescent mass transfer coefficient, Kq, for the impoundment using Form 11 line 29.

F. Calculate the overall mass transfer coefficient, KL, for the impoundment as follows: KL = (A-At)/A*Kq + At*Kt/A

PROCEDURES FORM FOR THE ESTIMATION OF THE KL FROM WATER8 a.b

Motor horsepower, hp	At, Turbulent area,		Effective depth, ft	V, Agitated volume, ft3	aV, Area per volume ft2/ft3
	ft2	m2			
5	177	16.4	10	1,767	0.1002
7.5	201	18.7	10	2010	0.1000
10	227	21	10.5	2383	0.0953
15	284	26.4	11	3119	0.0911
20	346	32.1	11.5	3983	0.0869
25	415	38.6	12	4986	0.0832
30	491	45.7	12	5890	0.0834
40	661	61.4	13	8587	0.0770
50	855	79.5	14	11970	0.0714
60	1075	100	15	16130	0.0666
75	1452	135	16	23240	0.0625
100	2206	205	18	39710	0.0556

a Data for a high speed (1,200) rpm) aerator with 60 cm propeller diameter (d).

b This table provides information potentially useful for the value of At in Form 12.

Form 13

DATA FORM FOR THE ESTIMATION OF THE HENRY'S LAW CONSTANT FOR A COMPOUND IN THE BIOLOGICAL TREATMENT UNIT

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		Chlorobenzene
LISTED HENRY'S LAW VALUE AT 25 degrees Celsius. (ratio of mol fraction in gas to mole fraction in water)	1	
TEMPERATURE of the liquid in the unit (deg.C)	2	
CALCULATION OF K		
Temperature adjusted Henry's law value (equals the value on line 1 if the temperature on line 2 is 25)	3	

Discuss the basis of the temperature adjustment.

Temperature in degrees Kelvin. Add 273.16 to the number on line 2. Enter the results here.	4	
Temperature ratio. Divide 273.16 by the number on line 4. Enter the results here.	5	
Henry's Law adjustment factor. Multiply the number on line 5 by 0.804 and enter the results here.	6	
Henry's Law value (g/m3 gas per g/m3 liquid) Multiply the number on line 3 by the number on line 6 and divide the results by 1000. Enter the results here and on Form 10 line 3.	7	
Henry's Law value (atm m3 per mol) Divide the number on line 3 by 55555 and enter the results here.	8	

APPENDIX D – 1999 TECHNICAL SUPPORT DOCUMENT FOR THE EVALUATION OF AEROBIC BIOLOGICAL TREATMENT UNITS WITH MULTIPLE MIXING ZONES

7/99

Technical Support Document for the Evaluation of Aerobic Biological Treatment Units with Multiple Mixing Zones

I. OVERVIEW AND PURPOSE

This document is intended to provide information to assist anyone who needs to evaluate the performance of a biological treatment unit that does not meet the definition of an “enhanced biological treatment system or enhanced biological treatment process” (not considered a "thoroughly mixed treatment unit") because of limitations in overall unit mixing. This document is intended as support for evaluation of biological units with multiple mixing zones. The evaluation of the biological treatment unit can be used for certain compliance demonstration provisions in connection with Appendix C of 40 CFR part 63. Potential users of this document include owners and operators of sources who must demonstrate compliance with the requirements for biological treatment units presented in Appendix C of 40 CFR part 63, as well as enforcement personnel evaluating whether a specific biological treatment process meets the performance criteria required for regulation compliance. It is therefore assumed that readers of this document are familiar with the requirements of Appendix C of 40 CFR part 63, and consequently those requirements are not restated in this document. Users of this information should be familiar with conventional techniques for evaluating the extent of mixing in a biological treatment unit. This information is intended for clarification purposes only, does not constitute final agency action, and cannot be relied upon to create any rights enforceable by any party.

The purpose of this document is to provide technical support and procedures to determine the performance of a biological treatment unit that does not meet the criteria for being considered a “thoroughly mixed treatment unit” within the meaning of the enhanced biological treatment process definition in 40 CFR 63.111. The objectives of these evaluation procedures are to evaluate the performance of a unit that does not quickly disperse the entering wastewater and recycled biomass throughout the unit due to the design and operation of the unit. The evaluation of the effect of mixing limitations would provide an assessment of the volatilization of the compounds of concern as well as the biodegradation rates of those compounds.

Several alternative approaches are presented for evaluating the performance of a biological treatment process that is not considered to be “thoroughly mixed”. All of these procedures are considered to provide equally acceptable assessments and no one procedure is considered to take precedence over another. In some cases, however, it is not possible to use some of the procedures because of site specific conditions. These evaluation procedures have been designed to allow, to the extent reasonable, the use of existing information and to minimize the amount of new information that is required to evaluate the mixing characteristics of your system. After implementing the procedures of choice, it is necessary for you to have defined zones that have substantially uniform characteristics, especially the concentrations of volatile organic compounds. It is therefore recommended that in those cases where sufficient information is not available to successfully define zones using existing information, you should consider developing additional information to define zones with substantially uniform characteristics.

Some of the guidance provided in this document may not be needed for each procedure described in this document. For example, a laboratory based procedure may require uniform dissolved oxygen concentrations within a zone, whereas the multiple zone concentration measurement procedure may not require uniform dissolved oxygen concentrations. In other methods that require a characterization of the biological process, the concentrations of dissolved oxygen concentrations can be important.

II. BACKGROUND

Guidance for the evaluation of whether a biological treatment unit is a “thoroughly mixed treatment unit” is provided in the document **Technical Support Document for Evaluation of Thoroughly Mixed Biological Treatment Units** (11/98). This document defines procedures that may be used to divide a biological treatment unit into two or more mixing zones, with each mixing zone potentially considered a “thoroughly mixed treatment unit”. The mixing zones approach presented here is different from a tanks in series approach, because there is substantial exchange of material among the different mixing zones. This exchange of material among the different mixing zones is characterized by the concept of a recycle ratio that is applied to each of the interacting zones. The more general computer modeling approach that accounts for exchange of material among the different mixing zones is described in section H. Tables 5 and 6 address methods of estimating the extent of backmixing.

III. DESIGN CHARACTERISTICS THAT INFLUENCE THE REQUIREMENTS FOR MULTIPLE MIXING ZONES

This section describes the characteristics of units that are considered to contribute to multiple mixing zones in biological treatment units. The presence of multiple mixing zones is of concern because of the potential of volatilization as opposed to optimum biodegradation in some of the entrance zones.

Biomass separation and agitation are two important characteristics that influence the performance of a biological treatment system. The biomass characteristics can be different in the different zones in a multiple zone system. The uniformity of the biomass characteristics can be improved in a system that is designed or operated so that biomass separation occurs exterior to the aeration system (e.g., secondary clarifier with return of separated biomass to the aeration unit), with return of the separated biomass to the inlet of the system. In the design of the multiple zone system, the unit may have segments that have little or no observable agitation (quiescent zones in the air emission models), or segments with uneven liquid flow patterns, both in direction and velocity. Even with the presence of relatively stagnant zones, there should be enough fluid flow in each mixing zone to support the biomass suspension in the water column. Symptoms of a failure to support biomass in the water column include biomass layers, low dissolved oxygen or anaerobic decay at the base of the floor in these zones, and less overall biomass generation in the system than is theoretically expected. If biomass is not removed from the system with a clarifier, continued accumulation of the biomass in the system will require removal by dredging if the biomass is not removed by degradation in the biomass layers. The presence of biomass settling does not preclude the use of that section of the basin in the calculation of HAP removal, but the presence of biomass settling is an indicator that sections of a basin with substantially different biomass concentrations should be modeled as separate zones.

Baffles reduce mixing in the unit as a whole and the presence of internal baffles suggests deliberate control and restriction of mixing. Baffles can be intentionally included when designing a system with multiple mixing zones. The absence of baffles does not indicate the absence of multiple mixing zones.

One potential indicator of the need for the use of multiple mixing zones is a high length to width ratio in the treatment unit. Mixing in biological treatment units depends on the length to width ratio, the dispersion characteristics, and the retention time in the reactor. Long units are more difficult to mix uniformly. Generally, a length to width ratio of four to one, or greater, is considered a high ratio. Vivona (1983) states that plug flow sizing would be based on a length to width ratio of 4:1 to 12:1[1] . The requirements for multiple mixing zones can be much less than the requirements for plug flow design. In the technical approach described here, plug flow characterization requires 10 well-mixed zones (10 zones), and the characterization for multiple mixing zones is restricted to 2 to 5 zones. Additional information about well-mixed reactors, multiple reactors in series, and plug flow is described in Levenspiel[2], and Bailey and Ollis[3].

Multiple mixing zones are used to characterize large aeration basins. These large basins may be represented as a group of interacting zones. In a large aeration basin, these multiple zones may be required to account for differences in the component concentrations, in the biomass characteristics, and in the aeration characteristics.

Aeration that is greater near the inlet of the unit suggests a design for multiple mixing zones that do not have the same conditions in each zone. The greater loading in the initial zone could cause a greater oxygen demand near the inlet. This would imply that the inlet loading is not distributed throughout the unit and significant volatilization may occur prior to efficient biodegradation. The presence of non-uniform agitation and other characteristics such as concentrations of chemicals and concentrations of biomass do not imply that the unit does not meet the requirements for acceptable biodegradation performance, only that special procedures should be followed to evaluate the biodegradation performance.

Quiescent zones separating agitated zones may or may not be well-mixed . For example, surface units may be considered well mixed and uniform within the agitation zone around each surface aerator, but the aeration unit as a whole may not be well mixed throughout the entire unit. In dividing a unit containing multiple aerators into mixing zones, the zone definition should not be smaller than the zone around an aerator in a surface agitated basin that is uniformly agitated with surface aerators. Units designed so that the wastewater flows sequentially from one aeration unit to another may be considered as multiple mixing zones with one mixing zone for each aerator in the path of wastewater flow through the unit. This flow in series may be determined by inspection, or by tracer testing, or by design and operating characteristics.

Examples of design features that may result in poor biodegradation of the compounds in the entering wastewater in the entrance zone of a multiple mixing zone unit include (1) the absence of quick dispersion and thorough mixing and (2) the potential for significant volatilization prior to biodegradation. These two factors are interrelated in that quick dispersion and thorough mixing must occur prior to significant volatilization of the compounds of concern for the system to achieve efficient destruction through biodegradation. Certain design characteristics may lead to problems with respect to these factors. Some of these factors are discussed in the following sections.

IV. GENERAL PROCEDURES FOR EVALUATING THE MIXING CONDITION OF A BIOLOGICAL TREATMENT UNIT

A. Overview of procedure

This section presents a list of procedures that can be used to evaluate the mixing conditions of a biological treatment unit that has multiple mixing zones. The overall performance of the biological treatment unit is characterized by three factors: the fraction of the compounds entering the unit that is biologically degraded, the fraction of the compounds that is emitted from the unit as air emissions, and the fraction of the compounds that remains in the wastewater after treatment in the unit. If the total removal by biodegradation is acceptably great for the entire treatment unit, the unit may be considered as an acceptable biological treatment process for the purpose of regulatory compliance. In some cases, there may be very aggressive biodegradation and low stripping in the first part of the biological treatment unit. If the required destruction of compounds is achieved in that first part of the biological treatment unit, the characterization of the other parts of the biological treatment unit would not be required. If you choose to only characterize a section containing multiple zones of a large aeration basin, you should account for the internal recycle effects at the end of the section, because there will be backflow from outside the section back into the zone at the end of the section.

The first step is to subdivide the unit into a series of zones that have substantially uniform characteristics within each zone, such as organic compound concentrations, dissolved oxygen concentrations, and biomass concentrations. Then, the zone that can be considered as a well-mixed flow entrance zone is identified. If multiple inlets of wastewater are present, two or more entrance zones may be present. Depending on the unit, an entrance zone could extend for as much as one half the volume of the system. The procedures for evaluating the number of mixing zones are described in Section C and these procedures can be summarized as identifying zones that have uniform conditions and concentrations of components. The division of the system into zones depends on the complexity of the system and the technical approach. If laboratory based measurements of the biorate constant are used, it is important to match the dissolved oxygen and other important variables in the laboratory with those same important variables in the full scale system. With other procedures, the dissolved oxygen concentrations are less important. One of the procedures relies primarily on evaluations of the concentrations of the compounds of interest and the aeration characteristics: with that procedure, it is important to select zones with substantially uniform compound concentration and agitation characteristics.

The second step is optional and can be used to reduce the resources required for regulatory compliance if biological rate measurements are used to characterize the performance of the system. If the emission potential for the well-mixed flow entrance zone is greater than or equal to the other mixing zones, then only the first zone is evaluated and the performance of the other zones are assumed to be equal to the first zone. When the performance of the overall unit is evaluated by this approach and determined to be acceptable by this method, then an evaluation of the remaining zones are not required. The key to the confidence in this approach is the assurance that the first zone does not have superior performance to the remaining zones (the ratio of biological removal to air stripping is not greater in the first zone). Design factors that could prevent the use of this optional procedure include more aggressive biodegradation in the initial zone due to special biological activity from the recycled biomass, less aggressive aeration in the initial zone, and deeper unit depth in the initial zone.

The third step in the evaluation process is to identify the number of mixing zones that are needed to evaluate the system (2,3,4,5, or a maximum of 10) and proceed with the appropriate form for the number of mixing zones. The number of mixing zones that are needed to evaluate the system can be less than the total number of zones that are identified in step 1. Large aeration basins can have more than two dozen surface aerators that could theoretically be considered as a separate zone for each aerator, but due to the mixing characteristics, four or fewer zones could be selected for evaluation purposes. In this case several aerators would be included in a single zone. Procedures to identify the characteristics of mixing zones are described in Section C of this document, and forms are provided to complete the appropriate calculations for this identification of the number of mixing zones. The three procedures are design evaluation, tracer studies, and in–basin measurements. All of these procedures are considered to provide equally acceptable assessments of the number of mixing zones and no one procedure is considered to take precedence over another. Selection of the procedure will depend on the availability of information, the relative ease of obtaining the necessary information, and/or personal preferences.

If there is a question about how many mixing zones that should be used for describing the unit, use more zones rather than less. If additional zones are used to characterize a basin, the recycle ratios should be appropriately adjusted. Some of the technical approaches do not require the evaluation of recycle ratios.

Under some special design conditions, the overall unit cannot be considered to be either well-mixed, multiple-zones, or plug-flow. There are several different procedures for evaluating units in this document and all of the procedures in this document may not apply to those systems with specials designs, due to abnormal flow conditions, poor suspension of biomass, uncharacterized dissolved oxygen gradients, or other special site-specific factors. For those systems with special design conditions, the use of some of the procedures in this document may require detailed modeling of the actual site based upon appropriate modeling techniques, using the methods provided in this document as general guidance.

B. Determination that the Unit is Not Well-Mixed

The first step in the general determination of the biological performance of a wastewater treatment unit is to determine that the unit can not be considered as well-mixed. If an initial evaluation of the procedures in the document **Technical Support Document for Evaluation of Thoroughly Mixed Biological Treatment Units** indicates that the there is a likely probability that the unit would not be considered well-mixed, then proceed to the evaluation of the multiple mixing zones.

C. Determination of the Number of Mixing Units

1. Initial mixing zone

When you break an unit into zones, one or more of the zones is an initial mixing zone. You may determine that the unit has an initial mixing zone that can be considered as well-mixed by design evaluations, by tracer testing, by concentration testing, or by initial inspection. If the definition of the initial mixing zone cannot be considered as uniform or well-mixed, you should redefine the initial mixing zone so that it can be considered to be substantially uniform in conditions. Also, sampling of the initial mixing zones should be carried out in a central position in these zones so that the measured concentrations are representative of the conditions throughout the mixing zone.

2. Number of mixing units from dispersion analysis

In the case of submerged aeration, if you have a spiral flow aeration systems you may use Form 15 to estimate the dispersion coefficient by the method of Fugii or you should use the default value of 0.068 m^2/s (Chambers) for the other types of submerged aeration systems. Next, use Form 16 to Calculate the value of u and L from the mean velocity and length of the aeration unit; then, use those values to calculate the dispersion number (D/uL). Use Table 1 and Table 2 to select the number of mixing zones from the value of the dispersion number. The number of units by this method is the equivalent number of tanks in series that will represent the characteristics of the dispersion and may be somewhat conservative when compared to other methods. The following equation describes dispersion in a closed system.[4]

$$\sigma^2 = 2\,(D/uL) - 2\,(D/uL)^2\,(1 - e^{-uL/D})$$

Table 1 presents some of the calculated values of the dimensionless variance using the above relationship.

Table 1. Relationship between the dispersion number and the dimensionless variance.

σ^2	D/uL
0.9674836	10
0.9216251	4
0.8975636	3
0.8522453	2
0.8155969	1.55
0.7990033	1.4
0.7652601	1.16
0.6867261	0.8
0.654858	0.7
0.6159904	0.6
0.6026241	0.57
0.5676676	0.5
0.5198208	0.42
0.4992198	0.39
0.4769162	0.36
0.4264213	0.3
0.3772895	0.25
0.332554	0.21
0.240831	0.14
0.1958027	0.11
0.1638002	0.09

The number of tanks in series model may be used for systems with either subsurface aeration or surface aeration basins.

The dimensionless variance σ^2 is then related to the number of tanks in series (no back mixing) with an equivalent variance, where the number of mixing units[5] equals the reciprocal of the dimensionless variance, $1/\sigma^2$. The number of tanks in series that corresponds to the dimensionless variance depends on the extent of back mixing. The amount of back mixing in the tanks in series model is defined by the recycle ratio. The internal recycle ratio is the ratio of the flow due to mixing in the unit toward the inlet to the flow in the wastewater plus any external recycle. The recycle ratio in basins with surface aerators are estimated to be in the range of 2 to 4. The recycle ratio may be estimated from the local basin flow rates if they are available. If the backflow from zone N+1 to zone N is measured as 3 m^3/s and the flow rate of the wastewater to be treated plus the recycle flow is 1 m^3/s, the recycle ratio is estimated as 3/1 or 3. The recycle ratio is used with a number of tanks in series to model the mixing characteristics of the actual unit. Since the mixing characteristics of the actual unit are generally not identical to the theoretical mixing characteristics of the tanks in series with recycle model, the success of the model in describing the actual unit may depend on the selection of the number of zones and appropriate values for the recycle ratio. The appropriate value of the recycle ratio may depend on the selection of the zones. Information on the dispersion and flow in the system should be used to estimate the value of the recycle ratio.

The internal recycle in the tanks in series model is the flow rate of tank N+1 back to tank N. Figure 1 illustrates the model that was used to calculate the dimensionless variance for use in Table 2. The values in Table 2 were calculated and rounded to two significant figures.

Figure 1. Tank in series model with internal recycle.

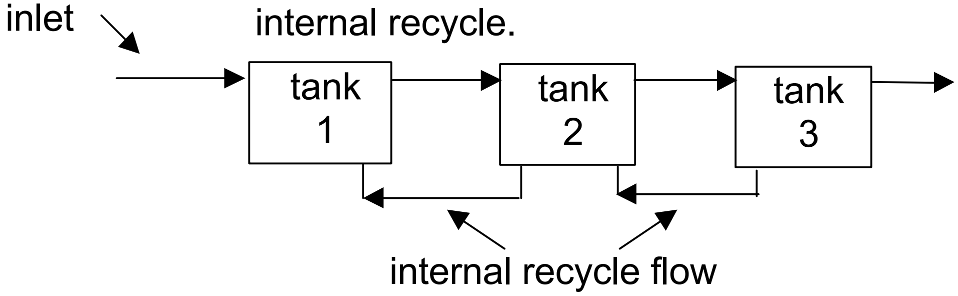


Table 2. Calculated dimensionless variance numbers σ^2 for various number of tanks in series at specified internal recycle values

tanks	Internal recycle ratio				
	0	1	2	3	4
1	0.99	0.99	0.99	0.99	0.99
2	0.467	0.78	0.86	0.85	0.88
3	0.33	0.62	0.76	0.81	0.86
4	0.244	0.52	0.66	0.75	0.81
5	0.193	0.44	0.59	0.68	0.74
6	0.16	0.38	0.53	0.63	0.66

To use Table 2, identify the applicable column that corresponds to the recycle ratio identified for the unit of interest. Look down the applicable column to locate the row containing the dimensionless variance that was estimated. The corresponding number of tanks in series is listed in the left column of that row. Linear interpolation may be used for Table 2.

Table 3 may be used for an assumed default recycle ratio of 3 for the biological treatment system with estimated dispersion numbers.

Table 3. Default values for the number of mixing units based on estimated dispersion numbers.

Dispersion number, D/uL	Number of mixing units
D/uL > 10	2
10 > D/uL > 1.4	3
1.4 > D/uL > 0.7	4
0.7 > D/uL > 0.5	5
0.5 > D/uL > 0.42	6

3. Number of mixing units from tracer analysis

You should only interpret the mixing characteristics of your unit by tracer analysis if you are experienced in tracer testing and understand the complexities of tracer interpretation. The following discussion presents an overview of the use of tracer testing to characterize the mixing characteristics of a unit.

When a sample of tracer is instantaneously added to the inlet pipe of a biological treatment unit, the amount of tracer leaving the unit in the exit pipe is measured as a function of time. The tracer measurements may be analyzed to determine the mean residence time and the standard deviation of the distribution. The exit tracer concentration will increase with time, reach a peak or maximum concentration, and then decay with time. Other observations of interest include the time for the maximum in the peak and the absence of multiple peaks. You must correct the results of the tracer analysis for recycle flow systems, because some of the exiting tracer will be returned to the unit with the recycled sludge. If the hydraulic residence time (volume divided by inlet flow) is approximately equal to the tracer residence time, this is an indication that the selection of tracer was good and that the unit does not have significant bypassing and abnormal flow patterns[6]. The ratio of the standard deviation to the mean residence time is the dimensionless variance. Look up the equivalent number of mixing units from the measured dimensionless variance in Table 4 if your unit has a recycle ratio of 2-4. The equations relating the dimensionless standard deviation to the number of units are discussed in the previous section.

Table 4. Default values for the number of mixing units based on measured dimensionless variances obtained from tracer testing. (Based upon a recycle ratio of 2-4)

dimensionless variance, σ^2	Number of units
$\sigma^2 > 1$	2
$1 > \sigma^2 > 0.8$	3
$0.8 > \sigma^2 > 0.66$	4
$0.66 > \sigma^2 > 0.57$	5
$0.57 > \sigma^2 > 0.53$	6
$0.53 > \sigma^2 > 0.47$	7
$0.47 > \sigma^2 > 0.41$	8
$0.35 > \sigma^2$	10

Tracer testing can provide information that may be helpful in evaluating the number of tanks in series and the internal recycle ratios needed to use the tanks in series model with backmixing. The peak or maximum tracer concentration discussed in the previous paragraph may be used to characterize the unit. The dimensionless peak time is the time of maximum tracer concentration at the exit of the unit divided by the hydraulic residence time of the unit. The dimensionless peak concentration is the maximum tracer concentration at the exit of the unit divided by the ratio of the amount of tracer to the volume of the unit. Tables 2, 5, and 6 may be used to select the number of tanks and internal recycle ratios for unit evaluation.

Table 5. Dimensionless peak times at various internal recycle values

tanks	Internal recycle ratio				
	0	1	2	3	4
1	0.005	0.005	0.05	0.05	0.05
2	0.5	0.43	0.37	0.33	0.3
3	0.66	0.53	0.47	0.434	0.4
4	0.74	0.6	0.54	0.5	0.46
5	0.8	0.65	0.58	0.54	0.51
6	0.83	0.68	0.61	0.57	0.54

Table 6. Dimensionless peak concentrations at various internal recycle values

tanks	Internal recycle ratio				
	0	1	2	3	4
1	0.997	0.997	0.997	0.997	0.997
2	0.740	0.550	0.440	0.363	0.309
3	0.819	0.627	0.517	0.442	0.386
4	0.907	0.68	0.573	0.498	0.443
5	0.991	0.730	0.618	0.543	0.487
6	1.07	0.777	0.656	0.580	0.524

4. Number of mixing units from design factors

Some units can have screens, baffles, and flow pattern designed to promote a controlled path of wastewater through the unit, rather than general mixing. For those cases, it may be appropriate to separate the unit into zones based upon the physical construction of the unit. If the unit contains nonuniform agitation or nonuniform aeration, zones should be selected that have relatively uniform surface characteristics. The primary guidance for the selection of the number of mixing zones in this case is that too many units will not adversely affect the results, but too few can adversely affect the accuracy of the unit evaluation.

5. Number of mixing units from measurements of concentrations

The number of mixing units may be obtained from measurements of concentrations of volatile compound concentrations at multiple locations in the unit. Zones are selected based upon these concentrations and a zone does not need to have the same concentration throughout the zone. Emissions from an area within the zone that are higher than the average for that zone can be offset by lower emissions from other areas in that same zone that are lower than the average if the concentrations in the zone are substantially uniform. In general, the division of the unit into more zones will increase the accuracy of the estimated air emission rate from the unit, but this increase may be very little for some systems. For systems with a continuous change in concentration across the surface of the system, a 15% difference in the volatile compound concentrations from the average value in a zone could be considered substantially uniform for the purpose of these calculations (range of approximately 30% of the mean). A consideration of the impact of the number of zones on the estimated fraction biodegraded and the estimated air emission rates can help resolve issues in the determination of the number of zones. A larger difference from the mean can be used if it can be shown that the zone size is sufficiently small such that numerical errors introduced by the larger grid size are an acceptably low value.[7] In some cases, errors in the grid size are not important in the evaluation of a biotreatment unit:

- the biodegradation removal effectiveness (f_{bio}) is substantially greater than required for regulatory compliance,

- a decrease in the grid size has no significant impact on the biodegradation removal effectiveness, and

- the biodegradation removal effectiveness is not sufficient for regulatory compliance and additional accuracy would not change the evaluation.

In other cases, errors due to a larger grid size can be important in the evaluation of a biotreatment unit: the biodegradation removal effectiveness (f_{bio})is neither significantly greater than or significantly lower than the value required for regulatory compliance. In this case, improved accuracy that is thought to be associated with a smaller grid size may be more effective in resolving uncertainty in regulatory compliance issues.

For example, consider a biotreatment unit with a requirement that 90 percent of the inlet HAPs be biodegraded (f_{bio}). If data collected during an initial performance test show that the unit typically achieves an f_{bio} of 91 percent, the zone size should be selected such that the numerical error introduced by using fewer zones is no more than 1 percentage point. However, if the initial performance test data show that the unit typically achieves an f_{bio} of, say, 97 percent, an acceptable numerical error may be 2 to 3 percentage points.

D. <u>Determination of the Relative Performance of the Initial Mixing Unit</u>

The second step is a determination of whether the initial mixing zone has an equal or greater emission potential than the other zones. This step is optional and can be used to reduce the resources required for regulatory compliance. If the emission potential for the well-mixed flow entrance zone is greater than or equal to the other mixing zones, then only the first zone is evaluated and the performance of the other zones are assumed to be equal to the first zone. When the performance of the overall unit is evaluated by this approach and determined to be acceptable by this method, then an evaluation of the remaining zones are not required. If the required biodegradation is achieved in the initial mixing zone, an evaluation of the remaining zones is not required.

You must provide an assurance that the first zone does not have superior performance to the remaining zones if you use this option. The first zone is generally the zone of the most environmental concern since the concentrations are greater, the relative biorates are potentially less, and mixing at the entrance is a potential problem. You should consider any design factors that could prevent the use of this optional procedure. Other design factors could include a deeper unit depth in the initial zone, the location of the inlet wastewater, and special mixing characteristics near the wastewater conduit.

Another factor that could conceivably prevent the use of this option include more aggressive biodegradation in the initial zone due to special biological activity from the recycled biomass. It has been suggested that the biomass has a greater potential for active enzyme formation and lower concentrations in the biomass, resulting in strong initial uptake of concentrations by the biomass.

If there is less aggressive aeration in the initial zone than in other zones, the initial zone could conceivably have a lower rate of stripping than in other zones. This could be especially important for surface aerator units and for submerged aeration units with uneven aeration.

E. Determination of the Overall Unit Performance from the Performance of the Initial Mixing Unit

The fraction of the concentration loading that is removed as air emissions and as biological products is estimated from the use of Form 3 using the measured biorate with the concentrations of compound and biomass in zone 1 and the characteristics of zone 1. These same fractions are then applied to each of the other zones in the biological treatment unit in sequence from zone 2 to the last zone of the unit. The fractions of removal by biodegradation and air emissions are estimated as follows:

$$f_{e,i} = f_{e,1} f_{r,i-1}$$

$$f_{b,i} = f_{b,1} f_{r,i-1}$$

$$f_{r,i} = f_{r,i-1}\left(1 - f_{e,1} - f_{b,1}\right)$$

The subscript i refers to the fraction in zone i, were i varies from 1 for the first zone to n for the n^th zone. If the biological treatment does not have an acceptable biological removal effectiveness by this method, this does not mean that the unit is unacceptable. It does mean that the unit is required to be evaluated by step 3 before it may be accepted as being biologically effective.

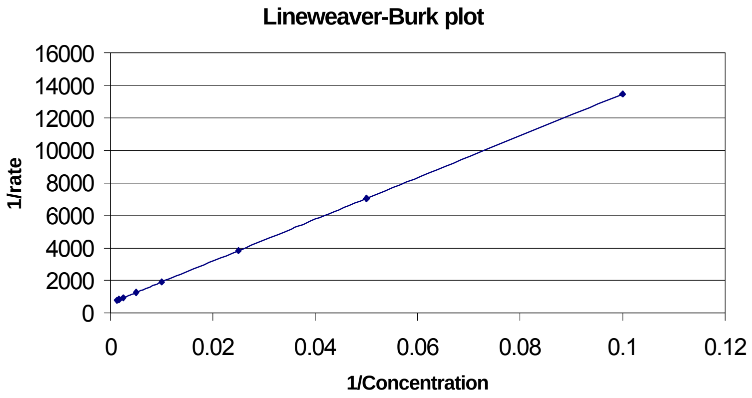
F. *Determination of the Characteristics of the Mixing Units*

1. Biological rates

The biological rates are measured in each mixing zone, where required for the procedures in this document. In step 2 only the biological rate (as determined by the appropriate methods in Appendix C of 40 CFR part 63) in the first mixing zone is required. If three or more mixing zones are evaluated, the biological rates for three zones can be measured, and the results plotted by the method of Lineweaver-Burk[8], yielding a straight line with a slope that is related to the first order rate constant and the intercept that is related to the zero order rate constant. The Monod equation then may be used to estimate biorates in zones other than the three that were used to measure biorates. For the purpose of the evaluation the actual biorate is used (gm/L-hr) for each zone.

The following illustration indicates the Lineweaver-Burk method of plotting the Monod rate data to obtain a straight line. Either the data from the correlating straight line may be used for the estimate of the biorate, or the Monod parameters may be determined from the slope and intercept. Formal statistics may be used to estimate the uncertainties in the values of the slope and intercept obtained from this approach.

In some units, you will not be able to use the Monod equation to correlate your data because your system may be more complex. For those systems a different correlation may be used to estimate the biorates for some of the zones. The general guidance for this case is that enough measurements must be carried out to establish an unambiguous correlation. Measurement in the initial mixing zone is always required, and measurement of the last mixing zone is desirable, unless the concentrations are too low for measurement. The user shall find a kinetic model to extrapolate measured biorates to zones that have concentrations that are too low for biorate measurement. The kinetic model that is used should describe the kinetics for the compound of interest that was measured for those mixing zones with higher concentrations.



2. Submerged aeration rates

Determine the submerged aeration rates for each mixing zone. This procedure is especially critical for systems that may have uneven aeration, either by design or by mechanical malfunction (broken headers, clogged exits). This procedure is less critical if the submerged aeration rates are generally uniform across the entire unit. The following two examples illustrate how the submerged aeration characteristics can be used to define the mixing zones in the unit.

Example 1. The treatment unit is a long rectangular channel with two different aeration zones, a higher initial aeration zone, and a lower secondary aeration zone. The unit was divided into four mixing zones on the basis of concentration measurements along the length of the unit. The first two mixing zones are characterized as higher aeration, and the last two mixing zones are characterized with the lower aeration rates.

Example 2. The treatment unit is a circular tank with flow inlets and exits at opposite sides of the tank. There is a broken header in the center of the tank with heavy aeration. The unit was divided into three mixing zones on the basis of the observed surface disruption due the broken header. The first and the last mixing zones are characterized with the design aeration rates as confirmed by flow measurement, and the center mixing zones was characterized with the higher aeration rates due to the broken header.

3. Mass transfer coefficients

You should select the number of mixing units to match the surface aeration pattern, for the presence of non-uniform surface agitation. If there is a grouping of two or more aerators such that their areas of agitation are sufficiently close together that the zone can be considered thoroughly mixed, this grouping can be considered as a set. If an impoundment has 4 of these sets of aerators between the entrance and the exit, four aeration zones could be an initial choice for zones. For more complex situations, mixing zones with different mass transfer coefficients may be required.

4. Biomass concentration

You should measure the biomass concentrations at several different places in each zone to establish that the biomass can be considered to be uniformly distributed within each mixing zone. If the system is operated with non-uniform biomass concentrations, non-uniform oxygen concentrations, or non-uniform compound concentrations in a zone, all of the evaluation procedures presented in this document should not be used , and appropriate site-specific methods may be required for some of the evaluation procedures. For abnormal operation, the worst-case measured conditions may be used with the guidance in this document to provide additional assurance that the performance of the unit is acceptable. If this worst case option is used, enough measurements should be taken to reasonably establish the worst case condition. Procedures that rely only on measured concentrations and estimated mass transfer coefficients do not require detailed measurements and characterizations of biomass concentrations and dissolved oxygen concentrations.

5. Dissolved Oxygen Concentration

The same general considerations apply to measurements of dissolved oxygen as with biomass, except that it is much easier to measure dissolved oxygen than biomass, since a dissolved oxygen probe can provide instantaneous measurements. It is possible therefore to make many dissolved oxygen measurements in a mixing zone demonstrating uniform conditions, and therefore potentially reducing the number of biomass concentration measurements that may be required. For effective aerobic biodegradation, the dissolved oxygen concentration will be significantly less than equilibrium (generally less than 7 ppm) and greater than 1.5 ppm (very low dissolved oxygen is an indication of less effective aerobic biodegradation. If the concentration of dissolved oxygen in a zone is less than 1.5 ppmw, the kinetic characterization of the biodegradation in that zone may indicate differences from the kinetic characterization in other zones that have concentrations of dissolved oxygen that are greater than 1.5 ppmw. A minimum dissolved oxygen concentration for aerated stabilization basins should be 0.5 ppmw. The actual dissolved oxygen concentrations that are representative of each zone are used in any laboratory measurements of biodegradation rates.

G. Sampling Methods and Locations

In the initial characterization of the mixing characteristics of a unit, sampling of the water in the unit is important for an accurate characterization. Some of the methods to characterize the performance of the unit require the measurement of one or more component concentrations at several sampling locations within the unit. The minimum number of sampling locations required to characterize component concentrations within the unit includes (1) the inlet, (2) within unit near the inlet, (3) the exit of the unit, and (4) within center of each mixing zone. Additional sampling locations are initially required to establish the number of mixing zones and to establish that the sampling location is characteristic of the zone. The inlet is sampled directly before entering the particular unit, and the exit is sampled directly at the outfall of the particular unit. The inlet sample may be collected upstream provided conveyance is by closed pipe and no additional streams are added to the conveyance system**.**

The sample within the first mixing zone will be taken as described in the following: first determine the physical dimensions of the first mixing zone. Sample within the center part of the first mixing zone. Additional samples of the aeration unit contents nearer the inlet should also be taken near the reactor inlet to confirm that the first mixing zone was appropriately chosen. The success of sampling the unit with this method depends on an accurate sampling of the inlet stream after it mixes with the aeration unit contents. Sampling in the unit should be conducted in the flow path of the inlet stream after the inlet flow has an opportunity to mix with the unit contents. The lesser value of either ½ the distance to the closest aerator, a distance of 10 times the diameter of the wastewater inlet pipe , or 10 meters may be used as the maximum sampling distance from the wastewater inlet.

Additional samples will be collected within each additional mixing zone as required by the procedures, and as required for biological rate testing.

1. Collection and handling of samples.

Sufficient grab samples to characterize the concentrations of target compounds should be collected from each of the following locations: (1) the influent to the biological treatment unit; (2) the effluent from the biological treatment unit; (3) the inlet to the aeration unit within the maximum sampling distance; and (4) near the center of each other relevant mixing zone. The number of samples required to characterize the unit depends on the complexity of the unit and the variability of the inlet waste concentrations and inlet flow concentrations. The relevant mixing zone samples shall be taken anywhere practical within the center of the mixing zone avoiding edge, bottom, or surface effects. When you sample to determine the number and location of the zones, samples are taken in different regions of each zone to evaluate the variability. Note: these samples may be collected by personnel from the sides of the aeration unit, with the assistance of flotation devices, pumps, conduits, and other devices on the sampling equipment to obtain samples that are representative of the center of the mixing zones. Measure the concentrations of the compounds of interest, the biomass, and each characterization parameter (dissolved oxygen, pH, COD) at each of these relevant locations. The aeration unit samples should be collected in the upper part of the basin at a depth of at least 1.0 foot below the surface of the water. When a set of samples is used to characterize the unit, all samples in the unit shall be collected during the same 24 hour period. Each of the sets of samples[1] should be collected to characterize the sampling and unit variability. If more than 3 samples are to be collected for the purpose of zone characterization, then the sample collecting should be carried out at approximately the same time. If time delays are required because of the sampling methods, the sampling locations and times should be scheduled to avoid a bias in the results due to systematic changes in concentrations. The aeration unit samples should be collected during the same time periods that the influent and effluent samples are collected. Under potentially changing conditions of treatment unit operation, samples should be collected for enough days to establish that the operating conditions are stable and that the measured samples are characteristic of those operating conditions.

One method for obtaining representative samples from the zones is to obtain grab samples of the reactor contents removed by a recirculating conduit. Those grab samples should be removed with a zero headspace device, especially if time composite samples are obtained. Samples should be poured from the grab sampling device into sample bottles in a manner that will

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[1] More than 3 samples may be collected from any of the locations, if necessary.

minimize volatilization of organic compounds. Sufficient hydrochloric acid (HCl) shall be added to each sample to reduce the pH to less than 2 to stop the biodegradation in the sample bottles, unless it is demonstrated that a different pH range is effective for stopping biodegradation and does not cause degradation products present at the lower pH level. The samples shall then be refrigerated at 4° C until analysis.

2. Number of Samples.

When the coefficient of variance[2] for sampling is large, it may be difficult to accurately estimate the mean of the distribution. One method for improving the accuracy of the determination of the mean is to increase the number of data points that is used in estimating the mean of the distribution. The following list presents a recommended minimum number of sequential data points that should be collected from the unit, based upon the measured coefficient of variance.

Coefficient of variance	Minimum number of data points
10	3
15	4
20+	5

3. Measurement of concentrations of relevant compounds.

All sample preservation, storage, and analyses shall be performed in accordance with the NPDES analytical procedures at 40 CFR part 136. You should only use methods that are suitable for measuring the relevant compounds. All quality assurance/quality control requirements of the applicable method shall be followed.

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[2] The coefficient of variance is the ratio of the standard deviation of the sample mean to the sample mean, multiplied by 100.

4. Estimation of zone concentrations with limited sampling

In the initial evaluation of the biological treatment unit, detailed sampling may be needed to characterize the performance of the unit. In later evaluations it may not be necessary to collect HAP samples from each zone in a multiple zone biological treatment unit in order to evaluate the overall performance of unit. For example, under the Multiple Zone Concentration Measurement Procedure (appendix C, part 63), the HAP concentration may be estimated for zones located between zones with measured HAP concentration data. The initial unit investigation should provide a sufficient database of measured concentrations in all zones of the treatment unit to allow for interpolation for those zones that are between zones with measured HAP concentrations. The database of HAP concentrations in each zone is developed during the initial biological treatment unit characterization.

The HAP sample collected for the zone should be representative of the average concentration of the zone. However, it is not necessary that the sample be collected at the center of the zone if it has been demonstrated during the initial biological treatment unit characterization that the sample location provides data that are representative of the zone. Any procedures used to correct the data from the sample location to the average expected concentration of the zone should be developed during the initial biological treatment unit characterization.

H. Computer Models

Computer models may be used to perform the calculations required for step 3. As a requirement for the use of the computer models for the site specific calculations, the following information must be available:

- an applicable set of site-specific rate data for each relevant compound correlated as Monod constants;

- a computer program that accounts for concentration variability of the biorate constant with the Monod constants;

- characterization of each mixing zone as a separate unit for modeling purposes, surface agitation effects, submerged aeration, and other factors; and

- evaluation of internal recirculation factors between each mixing zone for use in modeling the recycle streams between each adjacent mixing zone.

The concentrations of the compounds in the mixing zones are available from measurements in the mixing zones of the unit. Concentrations are estimated from the computer model accounting for internal mixing and concentration effects on the biorate. The internal recycle rate and the Monod constants are treated as adjustable parameters, and adjusted until the measured concentrations match the estimated concentrations from the computer model. The computer estimation of the biorates and the air stripping rates are then documented in Form 4, and the overall biological removal effectiveness is evaluated.

I. Applicable Multiple Mixing Zone Forms

Several forms are provided to assist in the organization of information that was used to estimate the biodegradation rates within a multiple mixing zone unit.

1. Form 1. Data Form For The Estimation Of Multiple Zone Compound Fraction Biodegraded And Air Emissions

Form 1 provides a summary of the unit performance (f_{bio} and f_e) based upon measured biorates, measured concentrations, and estimated mass transfer coefficients.

2. Form 2. Data Form For The Estimation Of The Biorate For Each Zone In The Biological Treatment System

This form is used to list the measured biorates from multiple zones and the measured concentrations in each zone. The bioremoval rate constant (sec^{-1}) is calculated from the concentrations and the measured biodegradation rates.

3. Form 3. Data Form For The Estimation Of The Biodegradation Rate For Each Zone

This form is used to estimate the fraction biodegraded and the fraction air stripped in a specific mixing zone of an unit. Form 3 compares the rate of biodegradation for a specific concentration to the rate of stripping for that same concentration. The concentration that is in the zone will depend on the recycle ratios, the number of zones, and other factors.

Form 4. Data Form For The Estimation Of Multiple Zone Compound Concentrations (3 Zones)

Form 4 provides estimated concentrations from measured biorates and estimated internal recycle rates. This form is used to estimate compound concentrations in the zones of units that are characterized by three mixing zones with internal recycle between the units. This kinetic model is different from reactors in series because of the internal recycle causing mixing of zone contents among the three units. This form could be used to confirm the modeling approach or to determine the internal recycling rates for modeling purposes.

5. Form 5. Data Form For The Estimation Of Multiple Zone Biodegradation From Unit Concentrations

Form 5 provides a method to estimate the biodegradation rates of a unit based upon the measured compound concentrations in each unit zone. This method can be useful for the situation in which the compound concentrations are below the detection limits of the measurement method at the exit and near the exit of the unit. The biodegradation rate is estimated as the difference in the inlet loading rate and the sum of the exit removal rate and the air stripping rate. Either forms may be completed or computer models (see Appendix C of 40 CFR part 63) may be used to estimate the mass transfer coefficient in each zone and the actual concentrations in each zone are sampled and measured. Because of uncertainties in the estimation of mass transfer coefficients, this method should not be used when the air stripping rate can potentially account for more than 25 percent of the removal. In the case of steady operation with accurate inlet and outlet concentrations and flows and estimated air stripping rates of a few percent, this method is thought to provide an accurate estimate of the overall unit biodegradation rate.

V. EXAMPLE FOR THE USE OF MEASURED BIORATES

Example 1 using Form 1 is presented with the forms. This example illustrates how the concentrations and measured biorates in the zones are used to estimate the fraction biodegraded and the fraction of air emissions in the full unit.

Step 1. Identify the number of zones.

Information required by Form 1 is collected from the full-scale unit. Based on tracer testing, three zones are identified for simulating the performance of the full-scale unit.

Step 2. Measure the concentrations in the zones.

Several concentrations are measured for various locations in the three zones that were identified in Step 1. An average concentration for each zone was obtained for use in Form 1. Use the actual measured concentrations, because the concentration in the recycle streams may not necessarily exactly equal the exit concentration from the unit.

Step 3. Measure the biorate for each zones.

The average concentration in each zone was used for measuring the biorates in a bench scale reactor. The biomass from the zone was used in the bench scale reactor. The reactor conditions were adjusted to duplicate the actual zone conditions, including dissolved oxygen concentration, waste concentrations, pH, and temperature.

Step 4. Complete Form 1.

Form 1 is completed and the following are calculated: the fraction biodegraded, the fraction of air emissions, and the fraction remaining in the full unit.

Step 5. Review the results of Form 1.

The fraction predicted that is remaining in the full-scale unit (Form 1, line 23) is compared to the calculated fraction remaining (Form 1, line 13). The concentration in the effluent is compared to the concentration in the last zone. Based upon the data analysis of Form 1 it is concluded that three zones are sufficient to model the full-scale system. If additional zones are needed, the concentrations obtained in Step 2 are used to define additional zones.

VI. REFERENCES

1. Vivona, "Designing Plug Flow Lagoons Using Two Stage Aeration", Poll.Eng., **15,** p.28-32 (1983)

2. Levenspiel, Octave Chemical Reaction Engineering. Chapter 9. Non-Ideal Flow John Wiley and Sons, Inc., New York, 1962.

3. Bailey and Ollis, Biochemical Engineering Fundamentals, Chapter 9. Design and Analysis of Biological Reactors. Second Edition, McGraw-Hill, Inc. New York, 1986.

4. Levenspiel, Octave Chemical Reaction Engineering. P. 263 John Wiley and Sons, Inc., New York, 1962.

5. Levenspiel, Octave Chemical Reaction Engineering. P. 283 John Wiley and Sons, Inc., New York, 1962.

6. Levenspiel, Octave Chemical Reaction Engineering. John Wiley and Sons, Inc., New York, 1962.

7. Manson and Wallis, "Towards an Accurate Fate and Transport Model for Nonuniform Surface Waters", Advances on Environmental Research, **1:1**,p. 2, 1999.

8. Bailey and Ollis, Biochemical Engineering Fundamentals, p 106. Second Edition, McGraw-Hill, Inc. New York, 1986.

Form 1

DATA FORM FOR THE ESTIMATION OF MULTIPLE ZONE COMPOUND FRACTION BIODEGRADED AND AIR EMISSIONS

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
Number of zones in the aerated biotreatment unit	1	
VOLUME of full-scale system (cubic meters)	2	
Average DEPTH of the full-scale system (meters)	3	
FLOW RATE of wastewater treated in the unit (m3/s)	4	
Recycle flow of wastewater added to the unit (m3/s)	5	
ESTIMATE OF KL from Form 6 (m/s)	6	
Concentration in the wastewater treated in the unit (mg/L)	7	
Concentration in the recycle flow (mg/L)	8	
Concentration in the effluent (mg/L).	9	

TOTAL INLET FLOW (m3/s) Add the number on line 4 to the number on line 5	10	
TOTAL RESIDENCE TIME (s) line 2 divided by line 10.	11	
Residence time in each zone. (s) line 11 divided by line 1	12	
fraction remaining (line 9 times line 10) divided by the sum of (line 7 times line 4) and (line 8 times line 5).	13	
Stripping factor, (/s) line 6 divided by line 3.	14	

Zone number	Concentration for zone, Ci (mg/L)	BIORATE Measured biorate for zone (mg/L-s), Bi	AIR STRIPPING line14 times Ci (mg/L-s)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
TOTALS sum for each zone.	15		16

REMOVAL FACTOR by air stripping (mg/L-s). Line 16.	17	
REMOVAL FACTOR by biodegradation (mg/L-s). Line 15.	18	
REMOVAL FACTOR for effluent (mg/L-s). Line 9 divided by line 12.	19	
TOTAL of the three loss mechanisms. Add the numbers on lines 20,21,and 22.	20	
Fraction biodegraded: Divide the number on line 18 by the number on line 20.	21	
Fraction air emissions: Divide the number on line 17 by the number on line 20.	22	
Fraction remaining in unit effluent: Divide line 19 by line 20.	23	
Total: add the numbers on lines 21, 22, and 23. The sum should equal 1.0	24	

note: as a quality control check, the number on line 23 should approximate the number on line 13.

Form 2

DATA FORM FOR THE ESTIMATION OF THE BIORATE FOR EACH ZONE IN THE ACTIVATED SLUDGE SYSTEM

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
The number of defined zones in the activated sludge system.	1	
BIORATE DATA FOR EACH DEFINED ZONE (Form 3)		
BIORATE (mg/L-s) Measured biorate for zone 1.	2	
BIORATE (mg/L-s) Measured biorate for zone 2.	3	
BIORATE (mg/L-s) Measured biorate for zone 3.	4	
BIORATE (mg/L-s) Measured biorate for zone 4.	5	
BIORATE (mg/L-s) Measured biorate for zone 5.	6	
CONCENTRATION FOR EACH DEFINED ZONE		
CONCENTRATION (mg/L) for zone 1.	7	
CONCENTRATION (mg/L) for zone 2.	8	
CONCENTRATION (mg/L) for zone 3.	9	
CONCENTRATION (mg/L) for zone 4.	10	
CONCENTRATION (mg/L) for zone 5.	11	
CALCULATED BIOREMOVAL RATE CONSTANT FOR EACH DEFINED		
BIOREMOVAL RATE (/s) for zone 1, line 2 divided by line 7.	12	
BIOREMOVAL RATE (/s) for zone 2, line 3 divided by line 8.	13	
BIOREMOVAL RATE (/s) for zone 3, line 4 divided by line 9.	14	
BIOREMOVAL RATE (/s) for zone 4, line 5 divided by line 10.	15	
BIOREMOVAL RATE (/s) for zone 5, line 6 divided by line 11.	16	

Form 3

DATA FORM FOR THE ESTIMATION OF THE BIODEGRADATION RATE FOR EACH ZONE

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
ESTIMATE OF K1 in the zone from Form 8 line 11, Form 9 line 15, Form 10 line 15, Form 11 line 13, or Form12 line 9. (L/g bio-hr)	1	
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the full-scale bioreactor.	2	
VOLUME of zone (cubic meters)	3	
AREA of the liquid surface of the zone (square meters)	4	
ESTIMATE OF KL from Form 6 (m/s)	5	
FLOW RATE of waste treated in the zone (m3/s)	6	

CALCULATIONS FROM ESTIMATES OF K1 AND KL

BIORATE (m3/s) Multiply the numbers on lines 1, 2, and 3 together and divide the results by 3600. Enter the results here.	7	
AIR STRIPPING (m3/s). Multiply the numbers on lines 4 and 5 together. Enter the results here.	8	
EFFLUENT DISCHARGE (m3/s). Enter the number on line 6 here.	9	
TOTAL of the three loss mechanisms. Add the numbers on lines 7, 8, and 9. Enter the results here.	10	
Fraction biodegraded: Divide the number on line 7 by the number on line 10 and enter the results here.	11	
Fraction air emissions: Divide the number on line 8 by the number on line 10 and enter the results here.	12	
Fraction remaining after zone treatment: Divide the number on line 9 by the number on line 10 and enter the results here.	13	
Total: add the numbers on lines 11, 12, and 13. The sum should equal 1.0	14	

Form 4

DATA FORM FOR THE ESTIMATION OF MULTIPLE ZONE COMPOUND CONCENTRATIONS (3 ZONES)

Total inlet flow (m3/s)	1	
Total number of zones	2	
Internal recycle ratio	3	
Total unit volume (m3)	4	
Zone volume (m3)	5	
Flow factor B, line 1 times line 3	6	
Flow factor A, line 6 plus line 1	7	
Inlet adjusted concentration (waste plus recycle)	8	
Flow factor E, line 8 times line 1	9	
Ratio of exit concentration to Zone 3 concentration	10	

	biorate (/s) A(i)	air stripping (/s) B(i)	removal factor (m3/s) C(i)=(ai + bi) times line 5	D(i) ci plus line 7
Zone 1				
Zone 2				
Zone 3				

Calculation exit concentration, C(3) = E / [-D(1)B/A - (B+D(2))D(1)D(3)/A/A - B D(3)/A]		
Calculation concentration ZONE 2, C(2) = C(3) D(3) /A		
Calculation concentration ZONE 1, C(1) = [E + C(2) B]/D(1)		
Calculation exit concentration, C(4) = number on line 10 times the number on line 11		

Form 5

DATA FORM FOR THE ESTIMATION OF MULTIPLE ZONE BIODEGRADATION FROM UNIT CONCENTRATIONS

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
Number of zones in the biological treatment unit	1	
VOLUME of full-scale system (cubic meters)	2	
Average DEPTH of the full-scale system (meters)	3	
Flow rate of wastewater treated in the unit (m3/s)	4	
Recycle flow of wastewater added to the unit, if any (m3/s)	5	
Concentration in the wastewater treated in the unit (mg/L)	6	
Concentration in the recycle flow, if any (mg/L)	7	
Concentration in the effluent (mg/L).	8	

TOTAL INLET FLOW (m3/s) line 4 plus the number on line 5	9	
TOTAL RESIDENCE TIME (s) line 2 divided by line 9.	10	
TOTAL AREA OF IMPOUNDMENT (m2) line 2 divided by line 3	11	

Zone number	Concentration for zone, Ci (mg/L)		Area of the zone, A (m2)	Estimate of KL in the zone (m/s) from Form 6		AIR STRIPPING KL A Ci (g/s)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
TOTALS sum for each zone.		12			13	

Removal by air stripping (g/s). Line 13.	14	
Loading in effluent (g/s). Line 8 times line 9.	15	
Total loading (g/s). (Line 5 * line 7) + (line 4* line 6).	16	
Removal by biodegradation (g/s) Line 16 minus (line 14 + line 15).	17	
Fraction biodegraded: Divide line 17 by line 16..	18	
Fraction air emissions: Divide line 14 by line 16.	19	
Fraction remaining in unit effluent: Divide line 15 by line 16.	20	

(identical to Form XIII Appendix C to Part 63)

Form 6

PROCEDURES FORM FOR THE ESTIMATION OF THE KL FROM UNIT SPECIFICATIONS

NAME OF THE FACILITY for site specific biorate determination	
NAME OF UNIT for site specific biorate determination	
NAME OF COMPOUND	
HENRY'S LAW constant for the compound (mole fraction in gas per mole fraction in water at 25 degrees Celsius)	

IDENTIFY THE TYPE OF UNIT (check one box below)

Quiescent impoundment	1	
Surface agitated impoundment	2	
Surface agitated impoundment with submerged air	3	
Unit agitated by submerged aeration gas	4	
EPA Method 304A, Covered unit, UNOX system, or bench scale reactor	5	

PROCEDURES BASED UPON THE TYPE OF UNIT

1. Use the quiescent impoundment model to determine KL. Use Kq as KL as determined from Form 7.
2. Use the quiescent impoundment model to determine KL for the quiescent zone, Form 7. Use the aerated impoundment model to determine KL for the agitated surface, Form 13.
3. Use the quiescent impoundment model to determine Kq for the quiescent zone, Form 7. Use the aerated impoundment model to determine KL for the agitated surface, Form 13.
The total system KL is the sum of the KL from Form 13 and the equivalent KL f
4. Use the aerated impoundment model to determine KL if the surface is agitated. Use the quiescent impoundment model if the surface is not agitated. KL includes the effect of volatilization in the air discharge. See section 5.6.1 in the AIR EMISSIONS MODELS FOR WASTE AND WASTEWATER (EPA -453/R-94-080A).
5. KL for the surface is assumed to equal zero. Determine equivalent KL based upon air discharge.
Use Form 9 for EPA Method 304A or if the concentration in the vent is not measured.
Use Form 10 if the concentration in the vent is measured.

Estimate of KL obtained from above procedures (m/s)	6	

(identical to Form II, Appendix C to Part 63)

Form 7

FORM FOR CALCULATING THE MASS TRANSFER COEFFICIENT FOR A QUIESCENT SURFACE IMPOUNDMENT

FACILITY NAME for site specific biorate determination	1	
COMPOUND for site specific biorate determination	2	

Input values

Enter the following:

F - Impoundment fetch (m)	3	
D - Impoundment depth (m)	4	
U10 - Windspeed 10 m above liquid surface (m/s)	5	
Dw - Diffusivity of compound in water (cm2/s)	6	
Dether - Diffusivity of ether in water (cm2/s)	7	
μG - Viscosity of air, (g/cm-s)	8	
G - Density of air, (g/cm3)	9	
Da - Diffusivity of compound in air, (cm2/s)	10	
A - Area of impoundment, (m2)	11	
H - Henry's law constant, (atm-m3/g mol)	12	
R - Universal gas constant, (atm-m3/g mol. K)	13	
μL - Viscosity of water, (g/cm-s)	14	
L - Density of liquid, (g/cm3)	15	
T - Impoundment temperature, (C)	16	

Calculate the following:

Calculate F/D: 17

A. Calculate the liquid phase mass transfer coefficient, kL, using one of the following procedures, (m/s)

1 Where F/D < 14 and U10 > 3.25 m/s, use the following procedure from MacKay and Yeun:

Calculate the Schmidt number on the liquid side, ScL, as follows:
ScL = μL/ (L x Dw) 18

Calculate the friction velocity, U*, as follows, (m/s):
U* = 0.01 x U10(6.1 + 0.63 U10)^0.5 19

Where U* is > 0.3, calculate kL as follows:
kL = (1.0 x 10^-6) + (0.00341)U* x ScL^-0.5 20

Where U* is < 0.3, calculate kL as follows:
kL = (1.0 x 10^-6) + (0.0144)(U*)^2.2 x ScL^-0.5 21

2 For all other values of F/D and U10, calculate kL using the following procedure from Springer:

Where U10 is < 3.25 m/s, calculate kL as follows:
kL = 2.78 x 10^-6(Dw/Dether)^(2/3) 22

Where U10 is > 3.25 and 14 < F/D < 51.2, Calculate kL as follows:
kL = [2.605 x 10^-9(F/D) + 1.277 x 10^-7] U10^2 (Dw/Dether)^(2/3) 23

Where U10 > 3.25 m/s and F/D > 51.2, calculate kL as follows:
kL = (2.611 x 10-7)U10^2 (Dw/Dether)^(2/3) 24

B. Calculate the gas phase mass transfer coefficient, kG, using the following procedure from MacKay and Matsasugu, (m/s):

Calculate the Schmidt number on the gas side, ScG, as follows: ScG =μG/(G x Da) 25

Calculate the effective diameter of the impoundment, de, as follows, (m):
de = (4A/3.14)^0.5 26

Calculate kG as follows, (m/s): kG = 0.00482 U10^0.78 ScG^-0.67 de^-0.11 27

C. Calculate the partition coefficient, Keq, as follows: Keq = H/[R(T+273)] 28

D. Calculate the overall mass transfer coefficient, Kq, as follows, (m/s):
1/Kq = 1/kL + 1/(Keq x kG) 29

Where the total impoundment surface is quiescent:
KL = Kq 30

Where a portion of the impoundment surface is turbulent, continue with Form 13.

Form 8

DATA FORM FOR THE ESTIMATION OF THE EPA METHOD 304B FIRST ORDER BIORATE CONSTANT

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
INLET CONCENTRATION used in EPA METHOD 304B	1	
EXIT CONCENTRATION measured by EPA METHOD 304B	2	
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the bench scale bioreactor.	3	
TEMPERATURE OF BIOREACTOR (deg. C)	4	
VOLUME of EPA METHOD 304B bench scale bioreactor (L)	5	
FLOW RATE of waste treated in the bench scale bioreactor (L/hr)	6	
CALCULATIONS FROM EPA METHOD 304B DATA MEASUREMENTS		
RESIDENCE TIME (hr) Divide the number on line 5 by the number on line 6 and enter the results here.	7	
Concentration Decrease (g/m3). Subtract the number on line 2 from the number on line 1 and enter the results here.	8	
BIORATE (g/m3-hr). Divide the number on line 8 by the number on line 7 and enter the results here.	9	
Product of concentration and biomass. Multiply the number on line 2 by the number on line 3 and enter the results here.	10	
BIORATE K1 (L/g MLVSS-hr) Divide the number on line 9 by the number on line 10 and enter the results here.	11	
Temperature adjustment. Subtract 25 deg. C from the number on line 4 and enter the results here.	12	
Temperature adjustment factor. 1.046 is the default temperature adjustment factor. Enter the temperature adjustment factor here.	13	
Biorate temperature ratio. Raise the number on line 13 to the power of the number on line 12.	14	
BIORATE K1 at 25 deg. C (L/g MLVSS-hr) Divide the number on line 11 by the number on line 14 and enter the results here.	15	

(identical to Form I, Appendix C to Part 63)

Form 9

DATA FORM FOR THE ESTIMATION OF K1 FOR EPA METHOD 304A OR FROM A COVERED, VENTED BIODEGRADATION UNIT.

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
BIOMASS (g MLVSS/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the unit.	1	
VENT RATE of total gas leaving the unit (G, m3/s)	2	
TEMPERATURE of the liquid in the unit (deg. C)	3	
INLET CONCENTRATION of compound (g/m3 or ppmw)	4	
EXIT CONCENTRATION of compound (g/m3 or ppmw)	5	
ESTIMATE OF Henry's law constant (H, g/m3 in gas / g/m3 in liquid). Obtained from Form IX	6	
AREA OF REACTOR (m2)	7	
VOLUME OF REACTOR (m3)	8	
FLOW RATE of waste treated in the unit (m3/s)	9	

CALCULATION OF THE ESTIMATE OF K1

TOTAL REMOVAL (g/s) Subtract the number on line 5 from the number on line 4 and multiply the result by the number on line 9. Enter the results here.	10	
[H G] ESTIMATE (m3/s) Multiply the number on line 2 by the number on line 6. Enter the results here.	11	
[K1 B V + H G] (m3/s) Divide the number on line 10 by the number on line 5. Enter the results here.	12	
[K1 B V] ESTIMATE (m3/s) Subtract the number on line 11 from the number on line 12. Enter the results here.	13	

If the number on line 11 is greater than the number on line 13, this procedure cannot be used to demonstrate that the compound is biodegradable. Do not complete lines 14 and 15.

Product of B and V. Multiply the number on line 1 by the number on line 8 and enter the results here.	14	
K1 ESTIMATE (L/g MLVSS-hr) Divide the number on line 13 by the number on line 14 and multiply by 3600 s/hr. Enter the results here.	15	
EQUIVALENT KL. Divide the number on line 11 by the number on line 7. Enter the results on line 16.	16	

(identical to Form V, Appendix C to Part 63)

Form 10

DATA FORM FOR THE CALCULATION OF K1 FROM A COVERED, VENTED BIODEGRADATION UNIT. THE VENT CONCENTRATION IS MEASURED.

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the unit.	1	
VENT RATE of total gas leaving the unit (G, m3/s)	2	
TEMPERATURE of the liquid in the unit (deg. C)	3	
INLET CONCENTRATION of compound (Ci, g/m3 or ppmw)	4	
EXIT CONCENTRATION of compound (Ce, g/m3 or ppmw)	5	
VENT CONCENTRATION of compound (Cv, g/m3)	6	
AREA OF REACTOR SURFACE (m2)	7	
VOLUME OF REACTOR (m3)	8	
FLOW RATE of waste treated in the unit (m3/s)	9	

CALCULATION OF THE ESTIMATE OF K1

TOTAL REMOVAL (g/s) Subtract the number on line 5 from the number on line 4 and multiply the results by the number on line 9. Enter the results here.	10	
[G Cv/Ce] ESTIMATE (m3/s) Multiply the number on line 2 by the number on line 6 and divide by the number on line 5. Enter the results here.	11	
[K1 B V + G Cv/Ce] (m3/s) Divide the number on line 10 by the number on line 5. Enter the results here.	12	
[K1 B V] ESTIMATE (m3/s) Subtract the number on line 11 from the number on line 12. Enter the results here.	13	

If the number on line 11 is greater than the number on line 13, this procedure cannot be used to demonstrate that the compound is biodegradable. Do not complete lines 14 and 15.

Product of B and V. Multiply the number on line 1 by the number on line 8 and enter the results here.	14	
K1 ESTIMATE (L/g MLVSS-hr) Divide the number on line 13 by the number on line 14 and multiply by 3600 s/hr. Enter the results here.	15	
EQUIVALENT KL. Divide the number on line 11 by the number on line 7. Enter the results here.	16	

(identical to Form Va, Appendix C to Page 63)

Form 11

DATA FORM FOR THE ESTIMATION OF K1 FROM FULL SCALE UNIT DATA WITH BIODEGRADATION

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the full-scale bioreactor.	1	
VOLUME of full-scale system (cubic meters)	2	
AREA of the liquid surface of the full-scale system (square meters)	3	
INLET CONCENTRATION of compound (g/m3 or ppmw)	4	
EXIT CONCENTRATION of compound (g/m3 or ppmw)	5	
ESTIMATE OF KL from Form 6 (m/s)	6	
FLOW RATE of waste treated in the full-scale bioreactor (m3/s)	7	

CALCULATION OF THE ESTIMATE OF K1 FROM FIELD DATA

REMOVAL WITH BIODEGRADATION (g/s) Subtract the number on line 5 from the number on line 4 and multiply the results by the number on line 7. Enter the results here.	8	
[KL A] ESTIMATE (m3/s) Multiply the number on line 3 by the number on line 6. Enter the results here.	9	
[K1 B V + KL A] (m3/s) Divide the number on line 8 by the number on line 5. Enter the results here.	10	
[K1 B V] ESTIMATE (m3/s) Subtract the number on line 9 from the number on line 10. Enter the results here.	11	
Product of B and V. Multiply the number on line 1 by the number on line 2 and enter the results here.	12	
K1 ESTIMATE (L/gbio-hr) Divide the number on line 11 by the number on line 12 and multiply by 3600 s/hr. Enter the results here.	13	

(identical to Form VI, Appendix C to Part 63)

Form 12

DATA FORM FOR THE CALCULATION OF BATCH RATES AND THE DETERMINATION OF THE MONOD CONSTANTS

COMPOUND for site specific biorate determination

Stripping rate constant (/hr) Form XI, line 11 1

Enter the batch test Biomass concentration (g/L) on line 2. 2

Headspace correction factor. For a Sealed Batch test use Form X line 12 or 1.00 for an Aerated Batch test. 3

A	B	C	D	E	F	G
concentration S (mg/L)	time (hr)	Rate for interval (mg/L-hr) (ai-ai+1)/(bi+1-bi)	Log Mean S for interval (mg/L) (ai-ai+1)/ ln(ai/ai+1)	Ratio of rate to S (/hr) (C/D)	Adjusted rate (/hr) (E-line 1)	Reciprocal of adj. rate (hr) (1/F)

Continue table on attached sheet as needed. Plot values in column G on y axis, values in column D on x axis. Extrapolate the trend of data points to the y intercept (S=0). Attach the plot to the form.

Form 12

Slope of line near intercept (hr-L/mg)	4	
Y intercept from plot (hr)	5	
First order rate constant K1 (or Qm/Ks, L/g-hr). The number 1.00 divided by the products of the values on line 5, line 2, and line 3.	6	
Zero order rate constant (Qm, /hr). The number 1.00 divided by the products of the values on line 4, line 2, and line 3.	7	
Concentration applicable to full-scale unit. Enter on line 8.	8	
Effective biorate K1 ESTIMATE (L/g bio-hr)*	9	

*Match the concentration on line 8 to the values in Column D and look up the equivalent rate in Column F. Divide the result with both the biomass concentration (line 2) and the headspace correction factor (line 3). Enter this value on line 9. Do not use this method to estimate K1 for line 9 in the data qualtiy is poor in Column F. The number on line 9 is multiplied by the biomass and the system concentration to estimate the full scale biorate. Alternatively, the Monod model parameteers may be used.

Form 13

DATA FORM FOR CALCULATING THE MASS TRANSFER COEFFICIENT FOR AN AERATED SURFACE IMPOUNDMENT

Facility Name:
Waste Stream Compound:

Enter the following:

J - Oxygen transfer rating of surface aerator, (lb O2/hr-hp)
POWR - Total power to aerators, (hp)
T - Water temperature, (C)
Ot - Oxygen transfer correction factor
MWL - Molecular weight of liquid
area per agitator (M2)
At - Turbulent surface area of impoundment, (ft2)
(If unknown, use values from Table 1)
A - Total surface area of impoundment, (ft2)
rho L - Density of liquid, (lb/ft3)
Dw - Diffusivity of constituent in water, (cm2/s)
Do - Diffusivity of oxygen in water, (cm2/s)
d - Impeller diameter, (cm)
w - Rotational speed of impeller, (rad/s)
a - Density of air, (gm/cm3)
N - Number of aerators
gc - Gravitation constant, (lbm-ft/s2/lbf)
d* - Impeller diameter, (ft)
Da - Diffusivity of constituent in air, (cm2/s)
MWa - Molecular weight of air
R - Universal gas constant, (atm-m3/g mol. C)
H = Henry's law constant, (atm-m3/g mol)

Calculate the following:

A. Calculate the liquid phase mass transfer coefficient, kL, using the following Equation from Thibodeaux:,

kL =[8.22 x 10^-9 J (POWR)(1.024)^(T-20) Ot 10^6 MWL/(At x rhoL/62.37)] (Dw/Do)^0.5, (m/s)

B. Calculate the gas phase mass transfer coefficient, kG, using the following procedure from Reinhardt:,

Calculate the viscosity of air, µa, as follows, (g/cm.s):
µa = 4.568 x 10^-7 T + 1.7209 x 10^-4

Calculate the Reynold's number as follows:
Re = d^2 w a/µa

Calculate power to impeller, PI, as follows, (ft.lbf/s):
PI = 0.85 (POWR) 550/N

Calculate the power number, p, as follows:
p = PI gc/(rho d*^5 w^3)

Calculate the Schmidt number, ScG, as follows:
ScG = μa/ (a x Da)

Calculate the Fronde number, Fr, as follows:
Fr = d* x w^2 /gc

Calculate kG as follows:
kG = 1.35 x 10^-7 Re^1.42 p^0.4 ScG^0.5 Fr^-0.21 Da MWa/d, (m/s)
if quiescent gas phase mass transfer coefficient is used, enter here else use above line.

C. Calculate the partition coefficient, Keq, as follows:
Keq = H/[R(T+273)]

D. Calculate the overall turbulent mass transfer coefficient, Kt, as follows, (m/s):
1/Kt = 1/kL + 1/(Keq x kG)

E. Calculate the quiescent mass transfer coefficient, Kq, for the impoundment using Form 7 line 29.

F. Calculate the overall mass transfer coefficient, KL, for the impoundment as follows: KL = (A-At)/A*Kq + At*Kt/A

PROCEDURES FORM FOR THE ESTIMATION OF THE KL FROM WATER8 a.b

Motor horsepower, hp	At, Turbulent area,		Effective depth, ft	V, Agitated volume, ft3	aV, Area per volume ft2/ft3
	ft2	m2			
5	177	16.4	10	1,767	0.1002
7.5	201	18.7	10	2010	0.1000
10	227	21	10.5	2383	0.0953
15	284	26.4	11	3119	0.0911
20	346	32.1	11.5	3983	0.0869
25	415	38.6	12	4986	0.0832
30	491	45.7	12	5890	0.0834
40	661	61.4	13	8587	0.0770
50	855	79.5	14	11970	0.0714
60	1075	100	15	16130	0.0666
75	1452	135	16	23240	0.0625
100	2206	205	18	39710	0.0556

a Data for a high speed (1,200) rpm) aerator with 60 cm propeller diameter (d).

b This table provides information potentially useful for the value of At.

Form 14

DATA FORM FOR THE ESTIMATION OF THE HENRY'S LAW CONSTANT FOR A COMPOUND IN THE BIOLOGICAL TREATMENT UNIT

NAME OF THE FACILITY for site specific biorate determination		
COMPOUND for site specific biorate determination		
LISTED HENRY'S LAW VALUE AT 25 degrees Celsius. (ratio of mol fraction in gas to mole fraction in water at one atmosphere)	1	
TEMPERATURE of the liquid in the unit (deg.C)	2	
CALCULATION OF K		
Temperature adjusted Henry's law value (equals the value on line 1 if the temperature on line 2 is 25)	3	
Discuss the basis of the temperature adjustment.		
Temperature in degrees Kelvin. Add 273.16 to the number on line 2. Enter the results here.	4	
Temperature ratio. Divide 273.16 by the number on line 4. Enter the results here.	5	
Henry's Law adjustment factor. Multiply the number on line 5 by 0.804 and enter the results here.	6	
Henry's Law value (g/m3 gas per g/m3 liquid) Multiply the number on line 3 by the number on line 6 and divide the results by 1000. Enter the results here.	7	
Henry's Law value (atm m3 per mol) Divide the number on line 3 by 55555 and enter the results here.	8	

Form 15

Form for the Estimation of Eddy Diffusivity with Submerged Aeration

Reference Fujie, 1983. Only use this form for spiral circulation due to aeration. Sprial circulation is usually found only in municipal plants. For more information, consult a reference book such as Metcalf and Eddy or WEF Aeration Manual.

	Name of site		
H	depth of unit (m)	1	
W	width of unit (m) (area/diameter for circular tanks)	2	
L	LENGTH [L] distance from inlet to reactor exit. (m) Represents the mean path of actual flow from inlet to exit. Can use diameter for circular tank. If the flow is across the width of a rectangular unit, enter the width here.	3	
Q	Flow rate water (m3/s)	4	
h	diffuser depth (m)	5	
A	Aeration rate per tank (m3 air/m3 liquid per h), volumetric rate of air divided by the volume of the unit.	6	
	for fine bubble system enter 1 on line 8.	7	

CALCULATION OF EDDY DIFFUSIVITY

Ugc	sup.air feed rate (cm/s) A*H/36	8	
theta	h*100*Ugc*(h/H)^0.5*(H/W)^0.333	9	
m	value from Table I.1 (see below)	10	
a	value from Table I.1 (see below)	11	
Uts	a*(theta^m) (cm/s)	12	
Utsc	Uts/100*3600 (m/h)	13	
lamda	0.0115*(1+H/L)^(-3)*Ugc^-0.34	14	
Ut	Q*3600/W/H	15	
E	diffusivity (m2/h) lamda*Utsc*(H+W)	16	
D	(m2/s) E/3600	17	

Table I.1

	m	a	
theta<=20	0.64	7	fine
theta>20	0.46	12	
theta<=20	0.78	3.5	coarse
theta>20	0.56	4.9	

Form 16

DATA FORM FOR THE CALCULATION OF THE DISPERSION NUMBER FROM A SUBMERGED AERATION UNIT

NAME OF THE FACILITY for site specific dispersion number determination	

VOLUME OF REACTOR (m3)	1	
FLOW RATE of wastewater treated in the unit (m3/s)	2	
FLOW RATE OF RECYCLE (m3/s)	3	
LENGTH [L] distance from inlet to reactor exit. (m) Represents the mean path of actual flow from inlet to exit. Can use diameter for circular tank. If the flow is across the width of a rectangular unit, enter the width here.	4	
EDDY DIFFUSIVITY [D] from Form 1 line 17 if spiral agitation or default value of 0.068 (m2/s)	5	

CALCULATION OF THE DISPERSION NUMBER

TOTAL INLET FLOW (m3/s) Add the number on line 2 to the number on line 3. Enter the results here.	6	
RETENTION TIME IN THE REACTOR (s) Divide the number on line 1 by the number on line 6. Enter the results hers.	7	
MEAN VELOCITY [U] (m/s) Divide the number on line 4 by the number on line 7. Enter the results here.	8	
DISPERSION NUMBER [D/UL] Divide the number on line 5 by the product of the number on line 8 and the number on line 4. Enter the results here.	9	

APPENDIX E – 40 CFR PART 63, SUBPART S IPT QUALITY ASSURANCE/QUALITY CONTROL

Table E-1

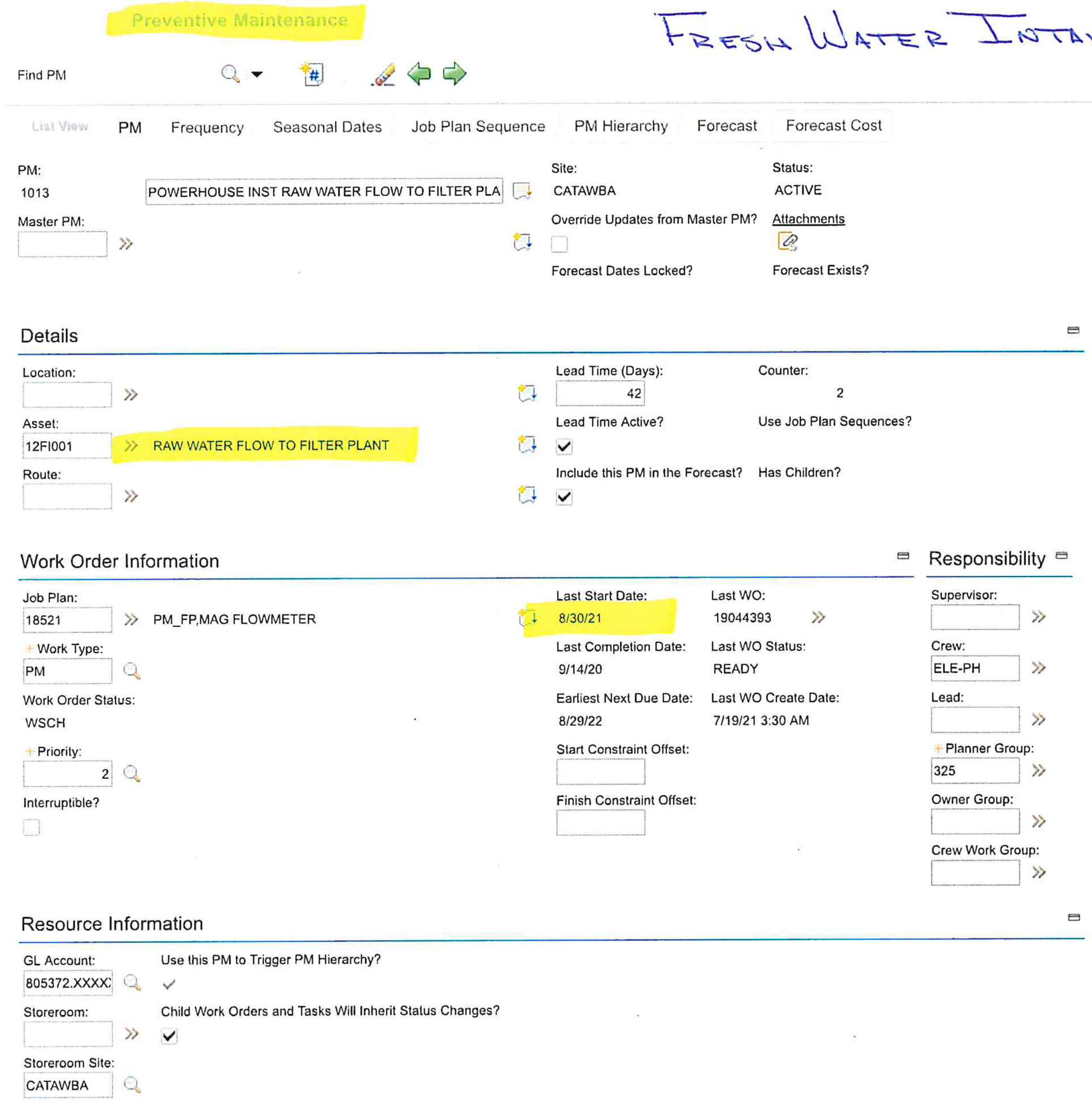
Comparison of Original and Duplicate Data - Methanol and HAP[(a)]

New-Indy Catawba - Catawba, SC

Sample Location	Date	Time	Acetaldehyde			2-Butanone (MEK)			Propionaldehyde			Methanol		
			Original Result (ppb)	Duplicate Result (ppb)	Percent Difference	Original Result (ppb)	Duplicate Result (ppb)	Percent Difference	Original Result (ppb)	Duplicate Result (ppb)	Percent Difference	Original Result (ppb)	Duplicate Result (ppb)	Percent Difference
Foul Condensate Composite	6/30/2021	8:00 AM	19	20	5%	10	10	0%	*0.5*	*0.5*	0%	2,000	2,100	5%
Foul Condensate Sample 3	7/9/2021	5:00 PM	24	24	0%	7.6	7.5	-1%	*0.5*	1.0	100%	2,500	2,400	-4%
Stripped Condensate Sample 3	7/9/2021	5:05 PM	3.8	3.6	-5%	1.7	1.5	-12%	*0.5*	*0.5*	0%	440	430	-2%
ASB Influent Sample 3	7/9/2021	5:40 PM	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	82	78	-5%
ASB Effluent Sample 3	7/9/2021	5:45 PM	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	*0.25*	*0.25*	0%
ASB Zone 1 Sample 1	7/10/2021	9:39 AM	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	59	57	-3%
ASB Zone 2 Sample 1	7/10/2021	8:31 AM	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	8.4	10	19%
ASB Zone 3 Sample 1	7/10/2021	8:14 AM	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	*0.5*	*0.5*	0%	*0.25*	0.86	244%

(a) Results in *italic* font were below the detection limit; half of the detection limit is reported.

Fresh Water Intake Flow Meter



Preventive Maintenance

PM: 1013 POWERHOUSE INST RAW WATER FLOW TO FILTER PLA

Site: CATAWBA

Status: ACTIVE

Master PM:

Override Updates from Master PM? ☐

Attachments

Forecast Dates Locked?

Forecast Exists?

Details

Location:

Asset: 12FI001 RAW WATER FLOW TO FILTER PLANT

Route:

Lead Time (Days): 42

Counter: 2

Lead Time Active? ☑

Use Job Plan Sequences?

Include this PM in the Forecast? ☑

Has Children?

Work Order Information

Job Plan: 18521 PM_FP,MAG FLOWMETER

Work Type: PM

Work Order Status: WSCH

Priority: 2

Interruptible? ☐

Last Start Date: 8/30/21

Last Completion Date: 9/14/20

Earliest Next Due Date: 8/29/22

Start Constraint Offset:

Finish Constraint Offset:

Last WO: 19044393

Last WO Status: READY

Last WO Create Date: 7/19/21 3:30 AM

Responsibility

Supervisor:

Crew: ELE-PH

Lead:

Planner Group: 325

Owner Group:

Crew Work Group:

Resource Information

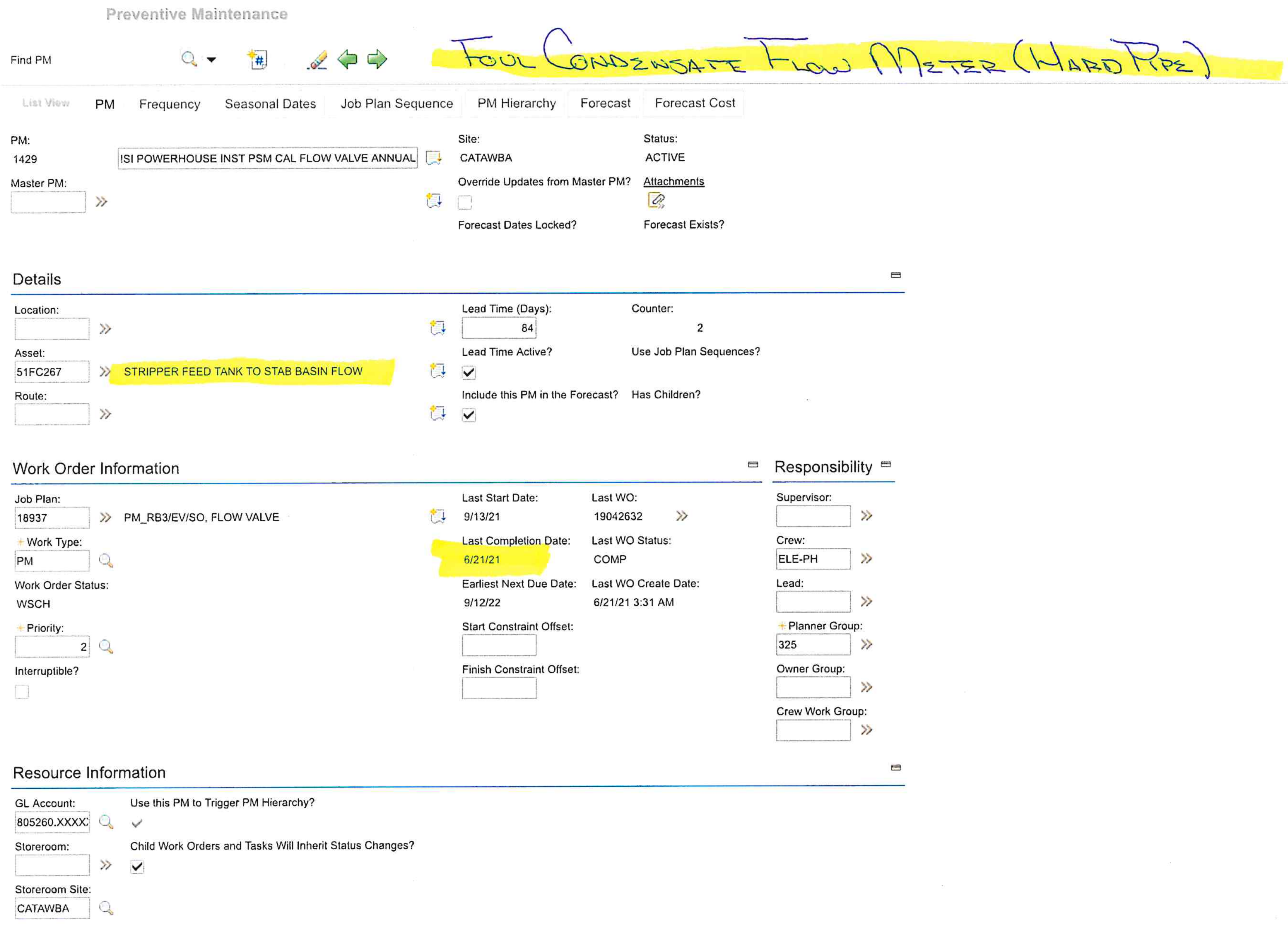
GL Account: 805372.XXXX)

Storeroom:

Storeroom Site: CATAWBA

Use this PM to Trigger PM Hierarchy? ✓

Child Work Orders and Tasks Will Inherit Status Changes? ☑



Preventive Maintenance

Find PM

FOUL CONDENSATE FLOW METER (HARD PIPE)

PM: 1429 ISI POWERHOUSE INST PSM CAL FLOW VALVE ANNUAL

Site: CATAWBA

Status: ACTIVE

Master PM:

Override Updates from Master PM? ☐

Attachments

Forecast Dates Locked?

Forecast Exists?

Details

Location:

Lead Time (Days): 84

Counter: 2

Asset: 51FC267 STRIPPER FEED TANK TO STAB BASIN FLOW

Lead Time Active? ☑

Use Job Plan Sequences?

Route:

Include this PM in the Forecast? ☑

Has Children?

Work Order Information

Job Plan: 18937 PM_RB3/EV/SO, FLOW VALVE

Last Start Date: 9/13/21

Last WO: 19042632

Work Type: PM

Last Completion Date: 6/21/21

Last WO Status: COMP

Work Order Status: WSCH

Earliest Next Due Date: 9/12/22

Last WO Create Date: 6/21/21 3:31 AM

Priority: 2

Start Constraint Offset:

Interruptible? ☐

Finish Constraint Offset:

Responsibility

Supervisor:

Crew: ELE-PH

Lead:

Planner Group: 325

Owner Group:

Crew Work Group:

Resource Information

GL Account: 805260.XXXX

Use this PM to Trigger PM Hierarchy? ✓

Storeroom:

Child Work Orders and Tasks Will Inherit Status Changes? ☑

Storeroom Site: CATAWBA

Calibration Report

Report Date: 5/3/2021

37-PIT-028	0"	0"	0"	No Change
SOG Pressure to No.2 Boiler Before Flame Arrestor	62.5"	62.6"	62.6"	No Change
Range: 0-250"WC	125"	125.3"	125.3"	No Change
	187.5"	187.8"	187.8"	No Change
	250"	251"	251"	No Change
37-PIT-032	0"	0.1"	0.1"	No Change
SOG Pressure to No.2 Boiler After Flame Arrestor	62.5"	62.7"	62.7"	No Change
Range: 0-250"WC	125"	125.3"	125.3"	No Change
	187.5"	187.9"	187.9"	No Change
	250"	250.6"	250.6"	No Change
37-PSH-025	7PSI	7PSI	7PSI	No Change
SOG to No.2 Boiler High Pressure				
Range: 7PSIG Rising				
37-PSHH-025	9PSI	9PSI	9PSI	No Change
SOG to No.2 Boiler High High Pressure				
Range: 9PSIG Rising				
51-DPSH-011	0PSI	0.4PSI	0.4PSI	No Change
Foul Condensate Fiber Strainer Differential Pressure	2.5PSI	3PSI	3PSI	No Change
Range: 0-10% Output of 51PDT011	5PSI	5.6PSI	5.6PSI	No Change
	7.5PSI	8.2PSI	8.2PSI	No Change
	10PSI	10.7PSI	10.7PSI	No Change
51-DPT-011	0PSI	2.5PSI	0PSI	Full Calibration
Foul Condensate Fiber Strainer Differential Pressure	25PSI	27.5PSI	25PSI	Full Calibration
Range: 0-100 PSID	50PSI	52.5PSI	50PSI	Full Calibration
	75PSI	75.6PSI	75PSI	Full Calibration
	100PSI	100.6PSI	100PSI	Full Calibration
51-FT-001	0"	1.3"	0"	Full Calibration
Foul Condenste Flow to Preheaters (INLET TO STRIPPER)	12.5"	13.8"	12.5"	Full Calibration
Range: 0-50"WC	25"	26.4"	25"	Full Calibration
	37.5"	38.9"	37.5"	Full Calibration
	50"	51.5"	50"	Full Calibration
51-FT-003	0"	0"	0"	No Change
150# Steam Flow to Reboiler & Stripper	25"	25"	25"	No Change
Range: 0-100"WC	50"	50.1"	50.1"	No Change
	75"	75.1"	75.1"	No Change
	100"	100.1"	100.1"	No Change

ACTS
AC Technical Services
AC Technical Services, Inc.
8600 Westmoreland Dr. NW
Concord, NC 28027
Phone (704) 573-7005

Calibration Report

Report Date: 5/3/2021

Customer: New-Indy
5300 Cureton Ferry Rd
Catawba SC, 29704
Contact: Mike Mills
Phone: 803-287-3996
Email: mike.mills@new-indycb.com

Technician: Noah Smith
Email: noah.smith@actecser.com
Equipment Tested: Temperature Transmitters
Calibration Date: 4/29/2021
Re-Calibration Due: 4/29/2022
Type Testing: Pressure Testing

Calibration Data

	Applied	As Found	As Left	Any Change?
51-TT-266	0F	.06F	.06F	No Change
Foul Condensate Feed Tank Temperature	62.5F	62.53F%	62.53F%	No Change
Range: 0-250 Degrees F	125F	125.07F	125.07F	No Change
	187.5F	187.57F	187.57F	No Change
	250F	250.07F	250.07	No Change
51-TT-008	0F	.06F	0.6F	No Change
Stripped Condensate to Brown Stock Shower Tank Temperature	62.5F%	63.2F	63.2F	No Change
Range: 0-250 Degrees F	125F	125.1F	125.1F	No Change
	187.5F	188.3F	188.3F	No Change
	250F	250.8F	250.8F	No Change
51-TT-004	0F	0.7F	0.7F	No Change
Foul Condensate to Condensate Preheaters Temperature	62.5F	63.5F	63.5F	No Change
Range: 0-250 Degrees F	125F	125.6F	125.6F	No Change
	187.5F	188.1F	188.1F	No Change
	250F	250.6F	250.6F	No Change
51-TT+009	0F	0.2F	0.2F	No Change
Stripped Condensate to Condensate Preheaters Temperature	100F	100.3F	100.3F	No Change
Range: 0-400 Degrees F	200F	200.4F	200.4F	No Change
	300F	300.4F	300.4F	No Change
	400F	400.5F	400.5F	No Change
51-TT-013	0F	0.3F	0.3F	No Change
150# Steam to Reboiler & Stripper Column Temperature	125F	125.3F	125.3F	No Change
Range: 0-500 Degrees F	250F	250.3F	250.3F	No Change
	375F	375.3F	375.3F	No Change
	500F	500.3F	500.3F	No Change
51-TT-010	0F	0F	0F	No Change
Foul Condensate to Stripper Column Temperature	100F	100.1F	100.1F	No Change
Range: 0-400 Degrees F	200F	200.1F	200.1F	No Change
	300F	300.1F	300.1F	No Change
	400F	400.1F	400.1F	No Change

AC Technical Services, Inc.
8600 Westmoreland Dr. NW
Concord, NC 28027
Phone (704) 573-7005

Calibration Report

Report Date: 5/3/2021

Customer: New-Indy
5300 Cureton Ferry Rd
Catawba SC, 29704
Contact: Mike Mills
Phone: 803-287-3996
Email: mike.mills@new-indycb.com

Technician: Noah Smith
Email: noah.smith@actecser.com
Equipment Tested: Temperature Transmitters
Calibration Date: 4/29/2021
Re-Calibration Due: 4/29/2022
Type Testing: Pressure Testing

Calibration Data

	Applied	As Found	As Left	Any Change?
51-TT-266	0F	.06F	.06F	No Change
Foul Condensate Feed Tank Temperature	62.5F	62.53F%	62.53F%	No Change
Range: 0-250 Degrees F	125F	125.07F	125.07F	No Change
	187.5F	187.57F	187.57F	No Change
	250F	250.07F	250.07	No Change
51-TT-008	0F	.06F	0.6F	No Change
Stripped Condensate to Brown Stock Shower Tank Temperature	62.5F%	63.2F	63.2F	No Change
Range: 0-250 Degrees F	125F	125.1F	125.1F	No Change
	187.5F	188.3F	188.3F	No Change
	250F	250.8F	250.8F	No Change
51-TT-004	0F	0.7F	0.7F	No Change
Foul Condensate to Condensate Preheaters Temperature	62.5F	63.5F	63.5F	No Change
Range: 0-250 Degrees F	125F	125.6F	125.6F	No Change
	187.5F	188.1F	188.1F	No Change
	250F	250.6F	250.6F	No Change
51-TT+009	0F	0.2F	0.2F	No Change
Stripped Condensate to Condensate Preheaters Temperature	100F	100.3F	100.3F	No Change
Range: 0-400 Degrees F	200F	200.4F	200.4F	No Change
	300F	300.4F	300.4F	No Change
	400F	400.5F	400.5F	No Change
51-TT-013	0F	0.3F	0.3F	No Change
150# Steam to Reboiler & Stripper Column Temperature	125F	125.3F	125.3F	No Change
Range: 0-500 Degrees F	250F	250.3F	250.3F	No Change
	375F	375.3F	375.3F	No Change
	500F	500.3F	500.3F	No Change
51-TT-010	0F	0F	0F	No Change
Foul Condensate to Stripper Column Temperature	100F	100.1F	100.1F	No Change
Range: 0-400 Degrees F	200F	200.1F	200.1F	No Change
	300F	300.1F	300.1F	No Change
	400F	400.1F	400.1F	No Change

0000162

CAROLINA PROCESS INSTRUMENTATION CALIBRATION REPORT

Date: 3/12/2021

Craftsman: R.P.

W.O.: 19033836

Test Equipment Used:

1. Manufacturer and Model:	Fluke 87V
Serial Number:	29340164
2. Manufacturer and Model:	Fischer Porter 55MC1020A
Serial Number:	99W042805
3. Manufacturer and Model:	
Serial Number:	

Instrument Being Tested:

Loop Device Number:	29FC-005
Loop Description:	#1 Pond Effuluent Flow
Manufacturer:	Fischer Porter
Model and Serial Number:	505D1110113AB2A321
Measurement/Input Range:	0-200CFS
Signal/Output Range:	4-20mA

Input in % and Eng. Units (_____ Eng. Units)	Transmitter Output		Process Error in Percent	
	As Found	As Left	As Found	As Left
0%	4.00 mA	4.00 mA	0%	0%
25%	8.01 mA	8.01 mA	0.06%	0.06%
50%	12.03 mA	12.03 mA	0.19%	0.19%
75%	16.03 mA	16.03 mA	0.19%	0.19%
100%	20.02 mA	20.02 mA	0.13%	0.13%
Average Error Over Calibrated Span			0.11%	0.11%
Pass				
Fail				

Specifications: ______________________ (From Instrument Calibration Procedure)

Note: Test results and comments are to be reviewed by the responsible supervisor. Note any discrepancies or follow-up work under comments. Forward copy of calibration report to operating department superintendent if device fails "As Found" or "As Left" accuracy.

Reviewed by: __________ E-I
__________ Date

Forwarded to: _______ N/A (Accuracy OK)
_______ Operating Dept. Supt.
_______ Date Copy Forwarded

Comments: (Continue on back if necessary)

____

____

Error Calculation: Each individual test point's MA error is divided by 16 MA (Span) and multiplied by 100 to get error in %. Add the 5 test points' % errors and divide by 5 (Test points) to get the average error. When adding errors keep in mind the + and -.

Valmet

52-KT/KE-0409A 87

TESTAUSPÖYTÄKIRJA

	Tehtävä	Raja-arvot	Tekijä	Pvm	Huomioita
1	Maadoituksen tarkistus	0-0,2 Ohm	375	24.01	
2	Hipot-testaus	Yli 1MOhm		— " —	
3	Taajuusmuuttajan parametrointi	---		— " —	
4	TCU:n kellonajan asetus	---		— " —	
5	RS-485- sarjaliikenteen toiminnan tarkistus	---		— " —	
6	Moottorin pyörimissuunnan tarkistus	---		— " —	

Test Report

Serial Number : J018XK538710001 to 0054
verter Number : CIMR-VCBA0003JAB
ype Number :
SW Number : 1025

Test Program	(Specification)	Result
1. Construction Inspection	(Visual Check)	Passed
2. Insulation Resistance Measurement	(500V Megger over 5Mohm)	Passed
3. Withstanding Voltage Test	(1850V AC 1 sec)	Passed
4. Motor Control Functions Test	(I/O Test, Forward, Reverse Motor Control Test)	Passed
5. Protective Functions Test	(Over Current ,Over Voltage)	Passed

Date of Test	Approved by Quality Assurance Department Drives Division
25/Oct/18	

YASKAWA ELECTRIC UK LTD.

1 Hunt Hill, Cumbernauld
SCOTLAND, G68 9LF, UK

IE +44-1236-735000
+44-1236-458182
http://www.yaskawa.co.uk/

YASKAWA EUROPE GmbH

Hauptstrasse 185
D-65760 Eschborn, GERMANY

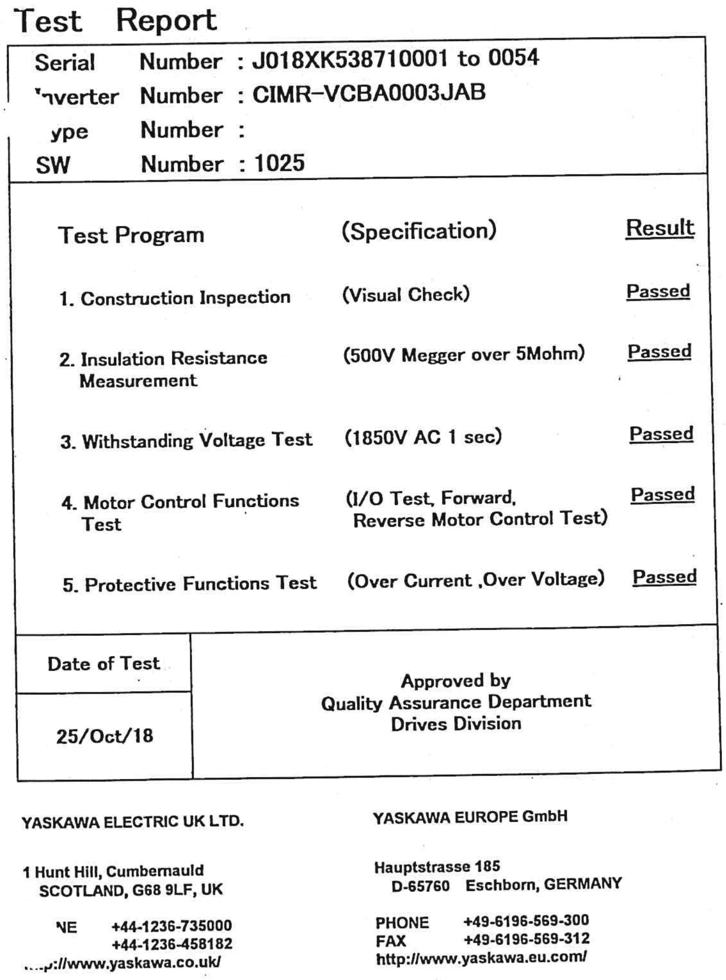
PHONE +49-6196-569-300
FAX +49-6196-569-312
http://www.yaskawa.eu.com/

Valmet

SQ-KE/KT-0409B

TESTAUSPÖYTÄKIRJA

	Tehtävä	Raja-arvot	Tekijä	Pvm	Huomioita
1	Maadoituksen tarkistus	0-0,2 Ohm	375	23.10.2019	
2	Hipot-testaus	Yli 1MOhm	—	— " —	—
3	Taajuusmuuttajan parametrointi	---		— " —	—
4	TCU:n kellonajan asetus	---		— " —	—
5	RS-485- sarjaliikenteen toiminnan tarkistus	---		— " —	—
6	Moottorin pyörimissuunnan tarkistus	---		— " —	—



Test Report

Serial Number : J018XK538710001 to 0054
nverter Number : CIMR-VCBA0003JAB
ype Number :
SW Number : 1025

Test Program	(Specification)	Result
1. Construction Inspection	(Visual Check)	Passed
2. Insulation Resistance Measurement	(500V Megger over 5Mohm)	Passed
3. Withstanding Voltage Test	(1850V AC 1 sec)	Passed
4. Motor Control Functions Test	(I/O Test, Forward, Reverse Motor Control Test)	Passed
5. Protective Functions Test	(Over Current ,Over Voltage)	Passed

Date of Test	Approved by Quality Assurance Department Drives Division
25/Oct/18	

YASKAWA ELECTRIC UK LTD.

1 Hunt Hill, Cumbernauld
SCOTLAND, G68 9LF, UK

NE +44-1236-735000
+44-1236-458182
…p://www.yaskawa.co.uk/

YASKAWA EUROPE GmbH

Hauptstrasse 185
D-65760 Eschborn, GERMANY

PHONE +49-6196-569-300
FAX +49-6196-569-312
http://www.yaskawa.eu.com/

EMERSON

Serial Number: ***21013160***

Configuration Date: 14-May-2020 **Time:** 11:17

Transmitter Order Information

Model: 8782AW1A1N5M4B6C1Q4
Customer: AMEC KAMTECH INC

Name Tag: 52-FT-0403
Short Tag: 52-FT-04

Message:

Descriptor:

Sales Order: ***10364948***

Unit: ***1***
Line: ***15***

Board S/N: 1162781
Address 0

Configuration Information

SW Revision: 7.1.3

Tube Cal Number: 0883984608670003

(4-20mA) **PV:** 0.0 to 3200.0 **Gallons(US)/min**

Pipe ID: 10 in.

Fixed Process Density: 61.7 lb/ft3

Flow Damping: 2.0 Second(s)

Low Flow Cutoff: .04 **ft/sec**

Totalizers: Off

	Units	Direction	Reset Opt
Totalizer A:	ft	Net	Resettable
Totalizer B:	ft	Forward	Non-Resettable
Totalizer C:	ft	Reverse	Non-Resettable

Totalizer Write Protect Start/Stop: Disabled
Totalizer Write Protect Reset: Disabled
Totalizer LOI Start/Stop: Enabled
Totalizer LOI Reset: Enabled

Pulse Output Factor: 0.1228898 Gallons(US)/Pulse

Security: Off
Alarm: RMT High
Analog Loop Power: Internal
Pulse Power: External

LOI Lang: ENGLISH

Meter Verification: Disabled
Diagnostics Licensed: None
Diagnostics Enabled: Empty Pipe

DIO: Disabled
DIO1:
DIO2:

Sensor

Sensor S/N: 1013190
Flange: ANSI 150
Flange Material: 304 SST
Operating Mode: Normal
Transmitter Gain: 100
Flowtube Gain: 100

Signal Processing: DEFAULT

Time Limit: 2.0
Coil Frequency: Low
Coil Current: 2000mA

Station: 8

EMERSON

28-May-20

FR Tecnologías de Flujo, S.A. de C.V.
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua, CHIH 31136 MEXICO

Certificate of Calibration - Consistent with ISO 10474 3.1B or EN 10204 3.1

Customer Information

Name: AMEC KAMTECH INC

PO No: X232311

Manufacturer Information

Sales Order: 10363300
Line: 3.1

Device Information

Device Type: Magnetic Flowmeter
Model: MS100AR1KHASA1M0N5L1D2Q4
Serial No.: 21015689
Tag: 52-FE-0407

Calibration Information

Calibration Lab: CHIHUAHUA, MEXICO
Calibration Date: 2020.05.28
Calibration Number: 0886605408799000
Internal Ref#: 7.22512160

Calibration Data - Velocity referenced to Schedule 40 pipe

Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m3/hr	Deviation % rate
9.9	3.02	2,432	552.5	**-0.03%**
9.9	3.02	2,434	552.7	**0.12%**
9.9	3.02	2,434	552.8	**-0.06%**
2.9	0.90	725	164.6	**0.06%**
2.9	0.90	723	164.3	**0.16%**
2.9	0.90	723	164.3	**0.08%**
1.1	0.33	265	60.2	**0.09%**
1.1	0.33	266	60.4	**0.10%**
1.1	0.33	266	60.5	**0.05%**

This certifies the Magnetic Flowmeter listed above meets applicable Rosemount product specifications. Measuring and test equipment used in the manufacture and inspection of the above flowmeter are traceable to International Standards. The calibration system was designed to meet the intent of ANSI Z540.3-2006.

Rolando Mata
Quality Manager

EMERSON.

Emerson Process Management Inc. Production Flow Facility Data

FR Tecnologías de Flujo, S.A. de C.V.; Ave. Miguel de Cervantes 111; Complejo Industrial Chihuahua; Chihuahua, CHIH 31136 MEXICO

Calibration Date: **2020.05.28**
Model number: **MS100AR1KHASA1M0N5L1D2Q4**
Serial number: **21015689**
Sales Order: **10363300**
Customer Tag: **52-FE-0407**
Transmitter type: **8732E**
Calibration Number: **0886605408799000**

0886605408799000

Run #	Flow Rate % FS	Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m3/hr	Deviation % rate
1	99.0	9.9	3.02	2,432	552	**-0.03%**
2	99.0	9.9	3.02	2,434	553	**0.12%**
3	99.0	9.9	3.02	2,434	553	**-0.06%**
4	29.5	2.9	0.90	725	165	**0.06%**
5	29.4	2.9	0.90	723	164	**0.16%**
6	29.4	2.9	0.90	723	164	**0.08%**
7	10.8	1.1	0.33	265	60.2	**0.09%**
8	10.8	1.1	0.33	266	60.4	**0.10%**
9	10.8	1.1	0.33	266	60.5	**0.05%**

Calibration conditions:

Water temperature = 80.4 F (26.9 C). Water conductivity > 200 microMho.
100% flow rate = 10 ft/sec (3.05 m/s) in schedule 40 pipe.
Calibration ID: 7.22512160

1934

Calibrator: GUERRERO, E.

This certificate is produced by an electronic data system and is valid without signature

EMERSON

28-May-20

FR Tecnologías de Flujo, S.A. de C.V.
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua, CHIH 31136 MEXICO

Certificate of Calibration - Consistent with ISO 10474 3.1B or EN 10204 3.1

Customer Information	**Manufacturer Information**
Name: AMEC KAMTECH INC	**Sales Order:** 10363300
	Line: 3.1
PO No: X232311	
Device Information	**Calibration Information**
Device Type: Magnetic Flowmeter	**Calibration Lab:** CHIHUAHUA, MEXICO
Model: MS100AR1KHASA1M0N5L1D2Q4	**Calibration Date:** 2020.05.28
Serial No.: 21015689 (Xmtr: 12180524)	**Calibration Number:** 0889085408761003
Tag: 52-FE-0407	**Internal Ref#:** 7.22512309

Calibration Data - Velocity referenced to Schedule 40 pipe

Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m3/hr	Deviation % rate
9.9	3.02	2,432.3	552.4	**0.13%**
9.9	3.02	2,432.4	552.5	**0.08%**
9.9	3.02	2,432.9	552.6	**0.06%**
2.9	0.90	723.7	164.4	**0.31%**
2.9	0.90	724.2	164.5	**0.28%**
2.9	0.90	723.7	164.4	**0.35%**
1.1	0.33	266.9	60.6	**0.41%**
1.1	0.33	266.4	60.5	**0.45%**
1.1	0.33	266.9	60.6	**0.23%**

This certifies the Magnetic Flowmeter listed above meets applicable Rosemount product specifications. Measuring and test equipment used in the manufacture and inspection of the above flowmeter are traceable to International Standards. The calibration system was designed to meet the intent of ANSI Z540.3-2006.

Rolando Mata
Quality Manager

This certificate is produced by an electronic data system and is valid without signature

EMERSON.

Emerson Process Management Inc. Production Flow Facility Data

FR Tecnologías de Flujo, S.A. de C.V.; Ave. Miguel de Cervantes 111; Complejo Industrial Chihuahua; Chihuahua, CHIH 31136 MEXICO

Calibration Date: **2020.05.28**
Model number: **MS100AR1KHASA1M0N5L1D2Q4**
Serial number: **21015689 (Xmtr: 12180524)**
Sales Order: **10363300**
Customer Tag: **52-FE-0407**
Transmitter type: **8782**
Calibration Number: **0889085408761003**

0889085408761003

Run #	Flow Rate % FS	Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m3/hr	Deviation % rate
1	99.0	9.9	3.02	2,432	552	**0.13%**
2	99.0	9.9	3.02	2,432	552	**0.08%**
3	99.0	9.9	3.02	2,433	553	**0.06%**
4	29.4	2.9	0.90	724	164	**0.31%**
5	29.5	2.9	0.90	724	164	**0.28%**
6	29.4	2.9	0.90	724	164	**0.35%**
7	10.9	1.1	0.33	267	60.6	**0.41%**
8	10.8	1.1	0.33	266	60.5	**0.45%**
9	10.9	1.1	0.33	267	60.6	**0.23%**

Calibration conditions:

Water temperature = 80.7 F (27.1 C). Water conductivity > 200 microMho.
100% flow rate = 10 ft/sec (3.05 m/s) in schedule 40 pipe.
Calibration ID: 7.22512309

Calibrator: GUERRERO, E. 1934

EMERSON

Serial Number: *21015554* **Configuration Date:** 29-May-2020 **Time:** 8:12

Transmitter Order Information

Sales Order: *10363300*

Model: 8782AW1A1N5M4B6C1Q4
Customer: AMEC KAMTECH INC

Unit: *1*
Line: *3*

Name Tag: 52-FT-0407
Short Tag: 52-FT-04

Message:

Board S/N: 1162359

Descriptor:

Address 0

Configuration Information

SW Revision: 7.1.3

Tube Cal Number: 0889085408761003

(4-20mA) **PV:** 0.0 to 2800.0 **Gallons(US)/min**

Pipe ID: 10 in.

Fixed Process Density: 65.4 lb/ft3

Flow Damping: 2.0 Second(s)

Totalizers: Off

Low Flow Cutoff: .04 **ft/sec**

	Units	Direction	Reset Opt
Totalizer A:	ft	Net	Resettable
Totalizer B:	ft	Forward	Non-Resettable
Totalizer C:	ft	Reverse	Non-Resettable

Totalizer Write Protect Start/Stop: Disabled
Totalizer Write Protect Reset: Disabled
Totalizer LOI Start/Stop: Enabled
Totalizer LOI Reset: Enabled

Pulse Output Factor: 0.1228898 Gallons(US)/Pulse

Security: Off
Alarm: RMT High
Analog Loop Power: Internal
Pulse Power: External

LOI Lang: ENGLISH

Meter Verification: Disabled
Diagnostics Licensed: None
Diagnostics Enabled: Empty Pipe

DIO: Disabled
DIO1:
DIO2:

Sensor

Sensor S/N: 1015689
Flange: ANSI 150
Flange Material: 304 SST
Operating Mode: Normal
Transmitter Gain: 100
Flowtube Gain: 100

Signal Processing: DEFAULT

Time Limit: 2.0
Coil Frequency: Low
Coil Current: 2000mA

Station: 8

EMERSON

May 29, 2020

Emerson
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua, CHIH 31136 , MEXICO
Tel +52 (614) 429 7000
Fax +52 (614) 429 7010

Q4 - Calibration Data Sheet Consistent with ISO 10474 3.1B or EN 10204 3.1

Customer Information

Name: **AMEC KAMTECH INC**

Purchase Order: **X232311**

Manufacturing Information

Sales order: **10363300**
Line Number: **3**

Device Information

Device Type: **Magnetic Flowmeter**
Tag Line 1: **52-FT-0407**
Serial number: **21015554**
Model number: **8782AW1A1N5M4B6C1Q4**

Output: **Hart**

4mA point: **0.0 Gallons(US)/min**
20mA point: **2800.0 Gallons(US)/min**

Calibration Information

Calibration Date: **May 29, 2020**

Transmitter Calibration Test

Test Station Calibration Information - Consistent with ISO 10474 3.1B

Test Velocity (ft/s)	Test Velocity (m/s)	Measured Velocity (ft/s)	Measured Velocity (m/s)	Deviation % rate
30.00	9.14	29.999678	9.143902	-0.001074%
1.00	0.305	0.999627	0.304686	-0.037285%

This is to certify that the Magnetic Flowmeter listed above meets the applicable product specifications. Measuring and test equipment used in the manufacture and inspection of the above flowmeter are directly traceable to the National Institute of Standards and Technology to meet the intent of ANSI Z540-1-1994.

Rolando Mata

Quality Manager

This certificate is produced by an electronic data system and is valid without signature.

EMERSON

Emerson Process Management Inc. Production Flow Facility Data

FR Tecnologías de Flujo, S.A. de C.V.; Ave. Miguel de Cervantes 111; Complejo Industrial Chihuahua; Chihuahua, CHIH 31136 MEXICO

Calibration Date: **2020.05.29**
Model number: **MS100AR1KHASA1M0N5L1D2Q4**
Serial number: **21015658 (Xmtr: 12180524)**
Sales Order: **10363300**
Customer Tag: **52-FE-0408**
Transmitter type: **8782**
Calibration Number: **0865985308526003**

0865985308526003

Run #	Flow Rate % FS	Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m3/hr	Deviation % rate
1	98.9	9.9	3.01	2,431	552	**0.08%**
2	99.0	9.9	3.02	2,433	552	**0.08%**
3	99.0	9.9	3.02	2,432	552	**0.04%**
4	29.4	2.9	0.90	723	164	**0.19%**
5	29.4	2.9	0.90	723	164	**0.17%**
6	29.4	2.9	0.90	724	164	**0.19%**
7	10.9	1.1	0.33	267	60.6	**0.33%**
8	10.9	1.1	0.33	267	60.6	**0.16%**
9	10.9	1.1	0.33	267	60.7	**0.29%**

Calibration conditions:

Water temperature = 74.5 F (23.6 C). Water conductivity > 200 microMho.
100% flow rate = 10 ft/sec (3.05 m/s) in schedule 40 pipe.
Calibration ID: 7.22513909

Calibrator: GUERRERO, E. 1934

This certificate is produced by an electronic data system and is valid without signature

EMERSON

29-May-20

FR Tecnologías de Flujo, S.A. de C.V.
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua, CHIH 31136 MEXICO

Certificate of Calibration - Consistent with ISO 10474 3.1B or EN 10204 3.1

Customer Information

Name: AMEC KAMTECH INC

PO No: X232311

Manufacturer Information

Sales Order: 10363300

Line: 4.1

Device Information

Device Type: Magnetic Flowmeter

Model: MS100AR1KHASA1M0N5L1D2Q4

Serial No.: 21015658 (Xmtr: 12180524)

Tag: 52-FE-0408

Calibration Information

Calibration Lab: CHIHUAHUA, MEXICO

Calibration Date: 2020.05.29

Calibration Number: 0865985308526003

Internal Ref#: 7.22513909

Calibration Data - Velocity referenced to Schedule 40 pipe

Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m3/hr	Deviation % rate
9.9	3.01	2,431	552.1	**0.08%**
9.9	3.02	2,433	552.5	**0.08%**
9.9	3.02	2,432	552.5	**0.04%**
2.9	0.90	723	164.3	**0.19%**
2.9	0.90	723	164.1	**0.17%**
2.9	0.90	724	164.4	**0.19%**
1.1	0.33	267	60.6	**0.33%**
1.1	0.33	267	60.6	**0.16%**
1.1	0.33	267	60.7	**0.29%**

This certifies the Magnetic Flowmeter listed above meets applicable Rosemount product specifications. Measuring and test equipment used in the manufacture and inspection of the above flowmeter are traceable to International Standards. The calibration system was designed to meet the intent of ANSI Z540.3-2006.

Rolando Mata
Quality Manager

This certificate is produced by an electronic data system and is valid without signature

EMERSON.

Emerson Process Management Inc. Production Flow Facility Data

FR Tecnologías de Flujo, S.A. de C.V.; Ave. Miguel de Cervantes 111; Complejo Industrial Chihuahua; Chihuahua, CHIH 31136 MEXICO

Calibration Date: **2020.05.29**
Model number: **MS100AR1KHASA1M0N5L1D2Q4**
Serial number: **21015658**
Sales Order: **10363300**
Customer Tag: **52-FE-0408**
Transmitter type: **8732E**
Calibration Number: **0861005408555000**

0861005408555000

Run #	Flow Rate % FS	Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m3/hr	Deviation % rate
1	98.9	9.9	3.01	2,430	552	**0.07%**
2	98.9	9.9	3.02	2,431	552	**-0.03%**
3	98.9	9.9	3.01	2,430	552	**0.00%**
4	29.4	2.9	0.90	723	164	**0.08%**
5	29.4	2.9	0.90	723	164	**0.10%**
6	29.4	2.9	0.90	722	164	**0.15%**
7	10.8	1.1	0.33	266	60.5	**-0.10%**
8	10.8	1.1	0.33	266	60.5	**0.01%**
9	10.8	1.1	0.33	265	60.3	**0.03%**

Calibration conditions:

Water temperature = 74.4 F (23.6 C). Water conductivity > 200 microMho.
100% flow rate = 10 ft/sec (3.05 m/s) in schedule 40 pipe.
Calibration ID: 7.22513794

1934

Calibrator: GUERRERO, E.

This certificate is produced by an electronic data system and is valid without signature

Printed: 2020.05.29 07:48:09 1 of 1

EMERSON

29-May-20

FR Tecnologías de Flujo, S.A. de C.V.
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua, CHIH 31136 MEXICO

Certificate of Calibration - Consistent with ISO 10474 3.1B or EN 10204 3.1

Customer Information	Manufacturer Information
Name: AMEC KAMTECH INC	**Sales Order:** 10363300 **Line:** 4.1
PO No: X232311	
Device Information	**Calibration Information**
Device Type: Magnetic Flowmeter	**Calibration Lab:** CHIHUAHUA, MEXICO
Model: MS100AR1KHASA1M0N5L1D2Q4	**Calibration Date:** 2020.05.29
Serial No.: 21015658	**Calibration Number:** 0861005408555000
Tag: 52-FE-0408	**Internal Ref#:** 7.22513794

Calibration Data - Velocity referenced to Schedule 40 pipe

Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m3/hr	Deviation % rate
9.9	3.01	2,430	551.9	**0.07%**
9.9	3.02	2,431	552.2	**-0.03%**
9.9	3.01	2,430	552.0	**0.00%**
2.9	0.90	723	164.2	**0.08%**
2.9	0.90	723	164.3	**0.10%**
2.9	0.90	722	164.0	**0.15%**
1.1	0.33	266	60.5	**-0.10%**
1.1	0.33	266	60.5	**0.01%**
1.1	0.33	265	60.3	**0.03%**

This certifies the Magnetic Flowmeter listed above meets applicable Rosemount product specifications. Measuring and test equipment used in the manufacture and inspection of the above flowmeter are traceable to International Standards. The calibration system was designed to meet the intent of ANSI Z540.3-2006.

Rolando Mata
Quality Manager

This certificate is produced by an electronic data system and is valid without signature

EMERSON

Serial Number: *21015555*

Configuration Date:01-Jun-2020 **Time:** 14:05

Transmitter Order Information

Sales Order: *10363300*

Model: 8782AW1A1N5M4B6C1Q4
Customer: AMEC KAMTECH INC

Name Tag: 52-FT-0408
Short Tag: 52-FT-04

Unit: *1*
Line: *4*

Message:

Board S/N: 1162469

Descriptor:

Address 0

Configuration Information

SW Revision: 7.1.3

Tube Cal Number: 0865985308526003

(4-20mA) **PV:** 0.0 to 2800.0 **Gallons(US)/min**

Pipe ID: 10 in.

Fixed Process Density: 65.4 lb/ft3

Flow Damping: 2.0 Second(s)

Totalizers: Off

Low Flow Cutoff: .04 **ft/sec**

	Units	**Direction**	**Reset Opt**
Totalizer A:	ft	Net	Resettable
Totalizer B:	ft	Forward	Non-Resettable
Totalizer C:	ft	Reverse	Non-Resettable

Totalizer Write Protect Start/Stop: Disabled
Totalizer Write Protect Reset: Disabled
Totalizer LOI Start/Stop: Enabled
Totalizer LOI Reset: Enabled

Pulse Output Factor: 0.1228898 Gallons(US)/Pulse

Security: Off
Alarm: RMT High
Analog Loop Power: Internal
Pulse Power: External

LOI Lang: ENGLISH

Meter Verification: Disabled
Diagnostics Licensed: None
Diagnostics Enabled: Empty Pipe

DIO: Disabled
DIO1:
DIO2:

Sensor

Sensor S/N: 1015658
Flange: ANSI 150
Flange Material: 304 SST
Operating Mode: Normal
Transmitter Gain: 100
Flowtube Gain: 100

Signal Processing: DEFAULT

Time Limit: 2.0
Coil Frequency: Low
Coil Current: 2000mA

Rev 2.08

Station: 8

EMERSON.

June 01, 2020

Emerson
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua, CHIH 31136 , MEXICO
Tel +52 (614) 429 7000
Fax +52 (614) 429 7010

Q4 - Calibration Data Sheet Consistent with ISO 10474 3.1B or EN 10204 3.1

Customer Information

Name: **AMEC KAMTECH INC**

Purchase Order: **X232311**

Manufacturing Information

Sales order: **10363300**
Line Number: **4**

Device Information

Device Type: **Magnetic Flowmeter**
Tag Line 1: **52-FT-0408**
Serial number: **21015555**
Model number: **8782AW1A1N5M4B6C1Q4**

Output: **Hart**

4mA point: **0.0 Gallons(US)/min**
20mA point: **2800.0 Gallons(US)/min**

Calibration Information

Calibration Date: **June 01, 2020**

Transmitter Calibration Test

Test Station Calibration Information - Consistent with ISO 10474 3.1B

Test Velocity (ft/s)	Test Velocity (m/s)	Measured Velocity (ft/s)	Measured Velocity (m/s)	Deviation % rate
30.00	9.14	29.998684	9.143599	-0.004388%
1.00	0.305	0.999659	0.304696	-0.034146%

This is to certify that the Magnetic Flowmeter listed above meets the applicable product specifications. Measuring and test equipment used in the manufacture and inspection of the above flowmeter are directly traceable to the National Institute of Standards and Technology to meet the intent of ANSI Z540-1-1994.

Rolando Mata

Quality Manager

This certificate is produced by an electronic data system and is valid without signature.

APPENDIX F – METHANOL FBIO CALCULATIONS USING FORM XIII OF APPENDIX C TO 40 CFR PART 63

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED

Data Date: 7/9/21

Instructions: Enter data in green shaded sections of this page of this spreadsheet only.

I. BIOTREATMENT UNIT DESCRIPTION

	Units	Zone 1	Zone 2	Zone 3
Number of 75 HP Aerators	#	16	15	6
Number of 100 HP Aerators	#	0	0	0
Total Horsepower	HP	1200	1125	450
Temperature	C	35.4	31.8	30.7
Length	ft	730	1,196	1,248
Width	ft	730	598	624
Average Depth	ft	4.5	3.2	3
Aerator Rotation	rpm	1200	1200	1200
Agitation Area per 75 HP aerator	ft2	1452	1452	1452
Agitation Area per 100 HP aerator	ft2	2206	2206	2206
Impellor Diameter	in	19.5	19.5	19.5

II. OVERALL PARAMS - individual flows

	Flow MGD	MeOH mg/L
Inlet Stream **	21.7	77.7
Condensate Stream	0.3	2,383
Outlet	22.0	0.3

** *except condensate flow*

NA - individual flow/conc data not available

II. OVERALL PARAMS - total flows

	Units	Flow m3/sec	Flow MGD	MeOH mg/L
Influent Concentration			22.0	112.0
Effluent Concentration				0.25
Wind Speed	mph			3.8

III. HAP DATA

Methanol

	Units	Inlet	Average Zone Concentration Zone 1	Zone 2	Zone 3	Detect Limit
Conc.	mg/L	112.0	80.0	4.9	0.3	0.5
Temp.	F		95.8	89.2	87.2	

IV. RESULTS

fbio - Methanol	%
Fraction biodegraded	86.8
Fraction air emissions	13.0
Fraction remaining in unit effluent	0.2

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED
PARAMETERS FOR CALCULATING MASS TRANSFER COEFIICIENTS

Data Date: 7/9

	Diff in Water cm2/s	Diff in Air cm2/s	Henry's Law atm-m3/mol	Equil. Ratio (Hc) or (Keq) m3 liq to m3 gas	MW g/mol	ScG	Antoine Eqtn b	c
Methanol	1.64E-05	0.150	5.19E-06	2.12E-04	32.0	1.006	1474	229.13
Acetaldehyde	1.41E-05	0.124	8.77E-05	3.58E-03	45.1	1.216	1600	291.8
MEK	9.80E-06	0.081	1.30E-04	5.31E-03	72.1	1.867	1305	229.27

General

	Units	Value	Name
viscosity of air	g/cm-s	0.000181	va
viscosity of water	g/cm-s	0.002	vw
density of air	g/cm3	0.0012	da
density of water	g/cm3	1	dw
MW of air	g/mol	29	Mwa
MW of water	g/mol	18	MWw
Diff of O2 in H2O	cm2/s	2.40E-05	DO2w
grav const.	lb-ft/s2/lb	32.17	g
R	atm-m3/mol K	8.21E-05	R_
Aerator Motor Eff	fraction	0.85	AerEff
O2 Trans Correct		0.83	Beta
Wind Speed	m/s	1.69	U
Diff of Ether	m/s	8.50E-06	Dether
O2 Trans	lb O2/HP-h	3	J

TURBULENT
KL Params

	Zone 1	Zone 2	Zone 3
w	126.3	126.3	126.3
Re	2.07E+06	2.07E+06	2.07E+06
PI	35063	35063	35063
Power Number, p	7.92E-04	7.92E-04	7.92E-04
Fr	8.06E+02	8.06E+02	8.06E+02
Total TurbArea (ft2)	23232	21780	8712
Total TurbArea (m2)	2158.3	2023.4	809.3
Frac. Agitated	0.044	0.030	0.011
(by surface aerators)			
QUIESCENT			
Depth	1.37	0.98	0.92
SurfArea (ft2)	532900	715208	778752
SurfArea (m2)	49573.02	66532.22	72443.40
F/D Ratio	183	298	332
ScL - Methanol	NA	NA	NA
ScL - Acetaldehyde	NA	NA	NA
ScL - MEK	NA	NA	NA
U* (Friction Velocity)	NA	NA	NA

These Parameters are used when F/D < 14 **AND** U > 3.25 m/s

DIFFUSED			
Air flow, cfm	0	0	0
Air flow, m3/s	0.000	0.000	0.000

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED

Calculating Mass Transfer Coefficient KL for Various Zones

Data Date: **7/9**

		Surface Aeration										
		Turbulent Area			Quiescent Area							
						kL, m/s						
							U10 > 3.25					
	Temp Adj H	kG m/s	kL m/s	KL turb m/s	kG m/s	U10 < 3.25	F/D<14	14<F/D<51.2	F/D>51.2	kL m/s	KL quisc m/s	KL overall m/s
Zone1												
Methanol	8.79E-06	1.55E-01	2.27E-02	5.38E-05	3.94E-03	4.31E-06	NA	2.69E-06	1.16E-06	4.31E-06	1.04E-06	3.34E-06
Zone 2												
Methanol	7.33E-06	1.55E-01	2.08E-02	4.54E-05	3.88E-03	4.31E-06	NA	4.02E-06	1.16E-06	4.31E-06	9.00E-07	2.26E-06
Zone 3												
Methanol	6.94E-06	1.55E-01	2.03E-02	4.32E-05	3.86E-03	4.31E-06	NA	4.41E-06	1.16E-06	4.31E-06	8.61E-07	1.33E-06

FORM XIII. DATA FORM FOR THE ESTIMATION OF MULTIPLE ZONE BIODEGRADATION FROM UNIT CONCENTRATIONS

Data Date: **7/9**

NAME OF THE FACILITY			
COMPOUND for site specific biorate determination		**Methanol**	
Number of zones in the biological treatment unit	1		
VOLUME of full-scale system (cubic meters)	2	198890.56	
Average DEPTH of the full-scale system (meters)	3	1.0878333	
FLOW RATE of wastewater to the unit (m3/s)	4	0.949	
FLOW RATE of condensate to the unit (m3/s)	5	0.014	
Total wastewater flowrate - (including condensates) (m3/s)	5-A	0.963	
ESTIMATE OF KL (m/s)	6	*see table*	
Concentration in the wastewater treated in the unit (mg/L)	7	77.666667	
Concentration in the condensates (mg/L)	8	2383.3333	
Concentration in wastewater (total - inc. cond) in (mg/L)	8-A	111.99344	
Concentration in the effluent (mg/L)	9	0.25	
TOTAL INLET FLOW (m3/s) line 4 plus the number on line 5 (or 5-A)	10	0.963	
TOTAL RESIDENCE TIME (s) line 2 divided by line 10.	11	206503	2.39 days
TOTAL AREA OF IMPOUNDMENT (m2) line 2 divided by line 3	12	182832	

Lines 13 through 15 Not Used

Zone Number	Concentration for zone, Ci (mg/L)		Area of the zone, A (m2)	Estimate of KL in the zone (m/s)		AIR STRIPPING KL A Ci (g/s)	
1	80		49506.41	3.33919E-06		13.2249	0.165311
2	4.866666667		66442.8232	2.25654E-06		0.7297	0.149931
3	0.25		72346.0608	1.33445E-06		0.024	0.096542
4							
5							
6							
TOTALS - sum for each zone.		15	188295.294		16	13.98	

Removal by air stripping (g/s). Line 16.	17	13.98
Loading in effluent (g/s). Line 9 times line 10.	18	0.24
Total loading (g/s). {(line 5*line 8)+(line 4*line 7)} or {line 5-A*line 8-A}.	19	107.9
Removal by biodegradation (g/s) Line 19 minus (line 17 + line 18).	20	93.6
Fraction biodegraded: Divide line 20 by line 19.	21	0.868
Fraction air emissions: Divide line 17 by line 19.	22	0.130
Fraction remaining in unit effluent. Divide line 18 by 19.	23	0.002

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED

Data Date: 7/10/21

Instructions: Enter data in green shaded sections of this page of this spreadsheet only.

I. BIOTREATMENT UNIT DESCRIPTION

	Units	Zone 1	Zone 2	Zone 3
Number of 75 HP Aerators	#	16	15	6
Number of 100 HP Aerators	#	0	0	0
Total Horsepower	HP	1200	1125	450
Temperature	C	36.2	32.0	31.0
Length	ft	730	1,196	1,248
Width	ft	730	598	624
Average Depth	ft	4.5	3.2	3
Aerator Rotation	rpm	1200	1200	1200
Agitation Area per 75 HP aerator	ft2	1452	1452	1452
Agitation Area per 100 HP aerator	ft2	2206	2206	2206
Impellor Diameter	in	19.5	19.5	19.5

II. OVERALL PARAMS - individual flows

	Flow MGD	MeOH mg/L
Inlet Stream **	21.6	91.7
Condensate Stream	0.3	2,267
Outlet	21.9	0.3

** *except condensate flow*

NA - individual flow/conc data not available

II. OVERALL PARAMS - total flows

	Units	Flow m3/sec	Flow MGD	MeOH mg/L
Influent Concentration			21.9	123.4
Effluent Concentration				0.25
Wind Speed	mph			3.8

III. HAP DATA

Methanol

	Units	Inlet	Average Zone Concentration Zone 1	Zone 2	Zone 3	Detect Limit
Conc.	mg/L	123.4	58.7	9.5	0.4	0.5
Temp.	F		97.2	89.6	87.8	

IV. RESULTS

fbio - Methanol	%
Fraction biodegraded	90.1
Fraction air emissions	9.7
Fraction remaining in unit effluent	0.2

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED
PARAMETERS FOR CALCULATING MASS TRANSFER COEFIICIENTS

Data Date: 7/10

	Diff in Water cm2/s	Diff in Air cm2/s	Henry's Law atm-m3/mol	Equil. Ratio (Hc) or (Keq) m3 liq to m3 gas	MW g/mol	ScG	Antoine Eqtn b	Antoine Eqtn c
Methanol	1.64E-05	0.150	5.19E-06	2.12E-04	32.0	1.006	1474	229.13
Acetaldehyde	1.41E-05	0.124	8.77E-05	3.58E-03	45.1	1.216	1600	291.8
MEK	9.80E-06	0.081	1.30E-04	5.31E-03	72.1	1.867	1305	229.27

General

	Units	Value	Name
viscosity of air	g/cm-s	0.000181	va
viscosity of water	g/cm-s	0.002	vw
density of air	g/cm3	0.0012	da
density of water	g/cm3	1	dw
MW of air	g/mol	29	Mwa
MW of water	g/mol	18	MWw
Diff of O2 in H2O	cm2/s	2.40E-05	DO2w
grav const.	lb-ft/s2/lb	32.17	g
R	atm-m3/mol K	8.21E-05	R_
Aerator Motor Eff	fraction	0.85	AerEff
O2 Trans Correct		0.83	Beta
Wind Speed	m/s	1.69	U
Diff of Ether	m/s	8.50E-06	Dether
O2 Trans	lb O2/HP-h	3	J

TURBULENT
KL Params

	Zone 1	Zone 2	Zone 3
w	126.3	126.3	126.3
Re	2.07E+06	2.07E+06	2.07E+06
PI	35063	35063	35063
Power Number, p	7.92E-04	7.92E-04	7.92E-04
Fr	8.06E+02	8.06E+02	8.06E+02
Total TurbArea (ft2)	23232	21780	8712
Total TurbArea (m2)	2158.3	2023.4	809.3
Frac. Agitated	0.044	0.030	0.011
(by surface aerators)			
QUIESCENT			
Depth	1.37	0.98	0.92
SurfArea (ft2)	532900	715208	778752
SurfArea (m2)	49573.02	66532.22	72443.40
F/D Ratio	183	298	332
ScL - Methanol	NA	NA	NA
ScL - Acetaldehyde	NA	NA	NA
ScL - MEK	NA	NA	NA
U* (Friction Velocity)	NA	NA	NA

These Parameters are used when F/D < 14 **AND** U > 3.25 m/s

DIFFUSED			
Air flow, cfm	0	0	0
Air flow, m3/s	0.000	0.000	0.000

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED

Calculating Mass Transfer Coefficient KL for Various Zones

Data Date: **7/10**

Surface Aeration												
		Turbulent Area			Quiescent Area							
						kL, m/s						
							U10 > 3.25					
	Temp Adj H	**kG** m/s	**kL** m/s	**KL turb** m/s	**kG** m/s	**U10 < 3.25**	F/D<14	14<F/D<51.2	F/D>51.2	**kL** m/s	**KL quisc** m/s	**KL overall** m/s
Zone1												
Methanol	9.11E-06	1.55E-01	2.31E-02	5.57E-05	3.94E-03	4.31E-06	NA	2.69E-06	1.16E-06	4.31E-06	1.07E-06	3.45E-06
Zone 2												
Methanol	7.42E-06	1.55E-01	2.09E-02	4.60E-05	3.88E-03	4.31E-06	NA	4.02E-06	1.16E-06	4.31E-06	9.08E-07	2.28E-06
Zone 3												
Methanol	7.06E-06	1.55E-01	2.04E-02	4.39E-05	3.86E-03	4.31E-06	NA	4.41E-06	1.16E-06	4.31E-06	8.72E-07	1.35E-06

FORM XIII. DATA FORM FOR THE ESTIMATION OF MULTIPLE ZONE BIODEGRADATION FROM UNIT CONCENTRATIONS

Data Date: **7/10**

NAME OF THE FACILITY				
COMPOUND for site specific biorate determination		**Methanol**		
Number of zones in the biological treatment unit	1			
VOLUME of full-scale system (cubic meters)	2	198890.56		
Average DEPTH of the full-scale system (meters)	3	1.0878333		
FLOW RATE of wastewater to the unit (m3/s)	4	0.946		
FLOW RATE of condensate to the unit (m3/s)	5	0.014		
Total wastewater flowrate - (including condensates) (m3/s)	5-A	0.960		
ESTIMATE OF KL (m/s)	6	*see table*		
Concentration in the wastewater treated in the unit (mg/L)	7	91.666667		
Concentration in the condensates (mg/L)	8	2266.6667		
Concentration in wastewater (total - inc. cond) in (mg/L)	8-A	123.38898		
Concentration in the effluent (mg/L)	9	0.25		
TOTAL INLET FLOW (m3/s) line 4 plus the number on line 5 (or 5-A)	10	0.960		
TOTAL RESIDENCE TIME (s) line 2 divided by line 10.	11	207270	2.40	days
TOTAL AREA OF IMPOUNDMENT (m2) line 2 divided by line 3	12	182832		

Lines 13 through 15 Not Used

Zone Number	Concentration for zone, Ci (mg/L)		Area of the zone, A (m2)	Estimate of KL in the zone (m/s)		AIR STRIPPING KL A Ci (g/s)	
1	58.66666667		49506.41	3.44621E-06		10.0091	0.17061
2	9.533333333		66442.8232	2.27985E-06		1.4441	0.15148
3	0.351666667		72346.0608	1.35275E-06		0.034	0.097866
4							
5							
6							
TOTALS - sum for each zone.		15	188295.294		16	11.49	

Removal by air stripping (g/s). Line 16.	17	11.49
Loading in effluent (g/s). Line 9 times line 10.	18	0.24
Total loading (g/s). {(line 5*line 8)+(line 4*line 7)} or {line 5-A*line 8-A}.	19	118.4
Removal by biodegradation (g/s) Line 19 minus (line 17 + line 18).	20	106.7
Fraction biodegraded: Divide line 20 by line 19.	21	0.901
Fraction air emissions: Divide line 17 by line 19.	22	0.097
Fraction remaining in unit effluent. Divide line 18 by 19.	23	0.002

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED

Data Date: 7/11/21

Instructions: Enter data in green shaded sections of this page of this spreadsheet only.

I. BIOTREATMENT UNIT DESCRIPTION

	Units	Zone 1	Zone 2	Zone 3
Number of 75 HP Aerators	#	21	15	6
Number of 100 HP Aerators	#	0	0	0
Total Horsepower	HP	1575	1125	450
Temperature	C	34.1	33.3	32.0
Length	ft	730	1,196	1,248
Width	ft	730	598	624
Average Depth	ft	4.5	3.2	3
Aerator Rotation	rpm	1200	1200	1200
Agitation Area per 75 HP aerator	ft2	1452	1452	1452
Agitation Area per 100 HP aerator	ft2	2206	2206	2206
Impellor Diameter	in	19.5	19.5	19.5

II. OVERALL PARAMS - individual flows

	Flow MGD	MeOH mg/L
Inlet Stream **	20.8	82.7
Condensate Stream	0.3	2,000
Outlet	21.2	0.8

** *except condensate flow*

NA - individual flow/conc data not available

II. OVERALL PARAMS - total flows

		Flow m3/sec	Flow MGD	MeOH mg/L
Influent Concentration			21.2	112.9
Effluent Concentration				0.85
Wind Speed	mph			3.8

III. HAP DATA

Methanol

	Units	Inlet	Average Zone Concentration Zone 1	Zone 2	Zone 3	Detect Limit
Conc.	mg/L	112.9	43.7	11.1	0.6	0.5
Temp.	F		93.3	92.0	89.5	

IV. RESULTS

fbio - Methanol	%
Fraction biodegraded	89.6
Fraction air emissions	9.7
Fraction remaining in unit effluent	0.7

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED
PARAMETERS FOR CALCULATING MASS TRANSFER COEFIICIENTS

Data Date: 7/11

	Diff in Water cm2/s	Diff in Air cm2/s	Henry's Law atm-m3/mol	Equil. Ratio (Hc) or (Keq) m3 liq to m3 gas	MW g/mol	ScG	Antoine Eqtn b	Antoine Eqtn c
Methanol	1.64E-05	0.150	5.19E-06	2.12E-04	32.0	1.006	1474	229.13
Acetaldehyde	1.41E-05	0.124	8.77E-05	3.58E-03	45.1	1.216	1600	291.8
MEK	9.80E-06	0.081	1.30E-04	5.31E-03	72.1	1.867	1305	229.27

General

	Units	Value	Name
viscosity of air	g/cm-s	0.000181	va
viscosity of water	g/cm-s	0.002	vw
density of air	g/cm3	0.0012	da
density of water	g/cm3	1	dw
MW of air	g/mol	29	Mwa
MW of water	g/mol	18	MWw
Diff of O2 in H2O	cm2/s	2.40E-05	DO2w
grav const.	lb-ft/s2/lb	32.17	g
R	atm-m3/mol K	8.21E-05	R_
Aerator Motor Eff	fraction	0.85	AerEff
O2 Trans Correct		0.83	Beta
Wind Speed	m/s	1.69	U
Diff of Ether	m/s	8.50E-06	Dether
O2 Trans	lb O2/HP-h	3	J

TURBULENT
KL Params

	Zone 1	Zone 2	Zone 3
w	126.3	126.3	126.3
Re	2.07E+06	2.07E+06	2.07E+06
PI	35063	35063	35063
Power Number, p	7.92E-04	7.92E-04	7.92E-04
Fr	8.06E+02	8.06E+02	8.06E+02
Total TurbArea (ft2)	30492	21780	8712
Total TurbArea (m2)	2832.7	2023.4	809.3
Frac. Agitated	0.057	0.030	0.011
(by surface aerators)			
QUIESCENT			
Depth	1.37	0.98	0.92
SurfArea (ft2)	532900	715208	778752
SurfArea (m2)	49573.02	66532.22	72443.40
F/D Ratio	183	298	332
ScL - Methanol	NA	NA	NA
ScL - Acetaldehyde	NA	NA	NA
ScL - MEK	NA	NA	NA
U* (Friction Velocity)	NA	NA	NA

These Parameters are used when F/D < 14 **AND** U > 3.25 m/s

DIFFUSED

Air flow, cfm	0	0	0
Air flow, m3/s	0.000	0.000	0.000

APPENDIX C FORMS - CALCULATING FRACTION BIODEGRADED

Calculating Mass Transfer Coefficient KL for Various Zones

Data Date: **7/11**

	Surface Aeration											
		Turbulent Area			Quiescent Area							
						kL, m/s	U10 > 3.25					
	Temp Adj H	kG m/s	kL m/s	KL turb m/s	kG m/s	U10 < 3.25	F/D<14	14<F/D<51.2	F/D>51.2	kL m/s	KL quisc m/s	KL overall m/s
Zone1												
Methanol	8.22E-06	1.55E-01	2.20E-02	5.05E-05	3.94E-03	4.31E-06	NA	2.69E-06	1.16E-06	4.31E-06	9.90E-07	3.83E-06
Zone 2												
Methanol	7.93E-06	1.55E-01	2.16E-02	4.89E-05	3.88E-03	4.31E-06	NA	4.02E-06	1.16E-06	4.31E-06	9.53E-07	2.41E-06
Zone 3												
Methanol	7.41E-06	1.55E-01	2.09E-02	4.59E-05	3.86E-03	4.31E-06	NA	4.41E-06	1.16E-06	4.31E-06	9.04E-07	1.41E-06

FORM XIII. DATA FORM FOR THE ESTIMATION OF MULTIPLE ZONE BIODEGRADATION FROM UNIT CONCENTRATIONS

Data Date: **7/11**

NAME OF THE FACILITY			
COMPOUND for site specific biorate determination	**Methanol**		
Number of zones in the biological treatment unit	1		
VOLUME of full-scale system (cubic meters)	2	198890.56	
Average DEPTH of the full-scale system (meters)	3	1.0878333	
FLOW RATE of wastewater to the unit (m3/s)	4	0.912	
FLOW RATE of condensate to the unit (m3/s)	5	0.015	
Total wastewater flowrate - (including condensates) (m3/s)	5-A	0.927	
ESTIMATE OF KL (m/s)	6	*see table*	
Concentration in the wastewater treated in the unit (mg/L)	7	82.666667	
Concentration in the condensates (mg/L)	8	2000	
Concentration in wastewater (total - inc. cond) in (mg/L)	8-A	112.94631	
Concentration in the effluent (mg/L)	9	0.8466667	
TOTAL INLET FLOW (m3/s) line 4 plus the number on line 5 (or 5-A)	10	0.927	
TOTAL RESIDENCE TIME (s) line 2 divided by line 10.	11	214578	2.48 days
TOTAL AREA OF IMPOUNDMENT (m2) line 2 divided by line 3	12	182832	

Lines 13 through 15 Not Used

Zone Number	Concentration for zone, Ci (mg/L)	Area of the zone, A (m2)	Estimate of KL in the zone (m/s)	AIR STRIPPING KL A Ci (g/s)	
1	43.66666667	49506.41	3.82563E-06	8.2702	0.189393
2	11.1	66442.8232	2.41222E-06	1.7790	0.160275
3	0.616666667	72346.0608	1.40676E-06	0.063	0.101774
4					
5					
6					
TOTALS - sum for each zone.	15	188295.294	16	10.11	

Removal by air stripping (g/s). Line 16.	17	10.11
Loading in effluent (g/s). Line 9 times line 10.	18	0.78
Total loading (g/s). {(line 5*line 8)+(line 4*line 7)} or {line 5-A*line 8-A}.	19	104.7
Removal by biodegradation (g/s) Line 19 minus (line 17 + line 18).	20	93.8
Fraction biodegraded: Divide line 20 by line 19.	21	0.896
Fraction air emissions: Divide line 17 by line 19.	22	0.097
Fraction remaining in unit effluent. Divide line 18 by 19.	23	0.007

APPENDIX G – DETAILED CONDENSATE COLLECTION AND TREATMENT TABLES

Table G-1

Detailed Condensate Collection Calculations

New-Indy Catawba - Catawba, SC

Date[a]	Foul Condensate Methanol (ppm)	Foul Condensate Total Flow (MGD)	Foul Condensate Methanol (lbs/day)	Pulp Production (ODT)	15-day Total Methanol (lbs)	15-day Total Pulp (tons)	15-day Total lbs Methanol/ODT
6/23/2021	1,700	0.86	12,218	1,539	--	--	--
6/24/2021	2,400	0.99	19,777	2,102	--	--	--
6/25/2021	2,600	0.97	21,077	2,040	--	--	--
6/26/2021	2,400	1.01	20,123	1,884	--	--	--
6/27/2021	2,500	0.83	17,264	1,808	--	--	--
6/28/2021	2,500	0.80	16,622	1,697	--	--	--
6/29/2021	2,400	0.95	18,976	1,804	--	--	--
6/30/2021	2,050	0.99	16,880	1,874	--	--	--
7/1/2021	1,900	1.09	17,199	1,360	--	--	--
7/2/2021	1,600	1.07	14,324	1,166	--	--	--
7/3/2021	2,000	1.12	18,707	1,749	--	--	--
7/4/2021	2,200	1.18	21,614	1,663	--	--	--
7/6/2021	1,600	1.46	19,460	1,806	--	--	--
7/7/2021	2,200	1.13	20,737	1,947	--	--	--
7/8/2021	2,300	1.11	21,346	1,449	276,326	25,889	10.7
7/9/2021	2,383	1.04	20,706	1,694	284,815	26,044	10.9
7/10/2021	2,267	1.06	20,091	1,609	285,129	25,551	11.2
7/11/2021	2,000	1.04	17,341	1,356	281,392	24,866	11.3

[a] July 5, 2021 was excluded from the IPT because the production was not representative of typical Mill operation.

Table G-2

Detailed Condensate Treatment Calculations - Steam Stripper

New-Indy Catawba - Catawba, SC

Date[a]	Foul Condensate Methanol (ppm)	Foul Condensate Flow to Stream Stripper (MGD)	MeOH to Stripper (lbs/day)	Pulp Production (ODTP)	MeOH to Stripper (lbs/ODTP)	Steam Stripper Steam Feed Rate (lb/hr)	ESFR	Stripped Condensate Flow (lbs/day)	Stripped Condensate MeOH (ppm)[b]	MeOH Leaving Steam Stripper (lbs/day)	MeOH Leaving Steam Stripper (lbs/ODTP)	MeOH Treated in Steam Stripper (lbs/ODTP)
6/23/2021	1,700	0.70	9,951	1,539	6.5	69,135	17.96	7,512,575	218	--	--	--
6/24/2021	2,400	0.70	14,055	2,102	6.7	64,778	16.67	7,410,757	427	--	--	--
6/25/2021	2,600	0.69	15,008	2,040	7.4	66,965	18.00	7,379,637	477	--	--	--
6/26/2021	2,400	0.69	13,746	1,884	7.3	54,506	14.47	7,035,538	--	--	--	--
6/27/2021	2,500	0.61	12,807	1,808	7.1	46,965	16.01	6,249,890	--	--	--	--
6/28/2021	2,500	0.68	14,281	1,697	8.4	63,962	17.82	7,247,645	--	--	--	--
6/29/2021	2,400	0.59	11,862	1,804	6.6	36,333	10.55	5,814,327	--	--	--	--
6/30/2021	2,050	0.52	8,838	1,874	4.7	38,198	15.15	5,227,964	--	--	--	--
7/1/2021	1,900	0.68	10,843	1,360	8.0	66,114	18.27	7,293,758	--	--	--	--
7/2/2021	1,600	0.71	9,442	1,166	8.1	64,901	16.92	7,458,826	--	--	--	--
7/3/2021	2,000	0.72	12,055	1,749	6.9	70,423	18.25	7,717,548	--	--	--	--
7/4/2021	2,200	0.65	11,912	1,663	7.2	59,076	17.58	6,832,300	--	--	--	--
7/6/2021	1,600	0.65	8,676	1,806	4.8	54,325	16.63	6,726,231	--	--	--	--
7/7/2021	2,200	0.72	13,207	1,947	6.8	67,944	18.04	7,633,926	--	--	--	--
7/8/2021	2,300	0.72	13,809	1,449	9.5	68,947	18.34	7,658,697	--	--	--	--
7/9/2021	2,383	0.71	14,200	1,694	8.4	68,069	18.27	7,591,791	418	3,176	1.9	6.5
7/10/2021	2,267	0.71	13,381	1,609	8.3	67,717	18.20	7,528,514	407	3,062	1.9	6.4
7/11/2021	2,000	0.71	11,768	1,356	8.7	67,455	17.94	7,502,789	370	2,776	2.0	6.6

(a) July 5, 2021 was excluded due to low pulp production unrepresentative of typical operation.

(b) Data collected as required by the SCDHEC Order for June 23-25, 2021 is presented in this table, but only data collected during the treatment portion of the IPT (July 9-11, 2021) was used to demonstrate compliance with the condensate treatment requirements of 40 CFR Part 63, Subpart S. Not all data required to determine compliance with 40 CFR Part 63, Subpart S was collected June 23-25, 2021.

Table G-3
Detailed R Factor Calculations
New-Indy Catawba - Catawba, SC

Date	Acetaldehyde (ppm)	MEK (ppm)	Propionaldehyde (ppm)	Concentration of non-MeOH HAP (ppm)	Pulp Production (ODTP)	Total Foul Condensate Flow (MGD)	F(nonmethanol) (lb/ODTP)	R-Factor
7/9/2021	24.33	7.65	0.90	32.88	1,694	1.04	0.17	0.014
7/10/2021	25.33	5.73	2.00	33.07	1,609	1.06	0.18	0.015
7/11/2021	25.00	4.83	3.67	33.50	1,356	1.04	0.21	0.017
Average:								0.015

Table G-4

Detailed Condensate Treatment Calculations - ASB

New-Indy Catawba - Catawba, SC

Date(a)	Foul Condensate Methanol (ppm)	Foul Condensate Flow to ASB (MGD)	MeOH to ASB (lbs/day)	MeOH to ASB, 15-day Total (lbs/day)	Pulp Production (ODTP)	MeOH to ASB, 15-day Total (lbs/ODTP)	Number of Aerators	F_{bio}	R-Factor	MeOH Treated in ASB (lbs/ODTP)
6/23/2021	1,700	0.16	2,267	--	1,539	--	--	--	--	--
6/24/2021	2,400	0.29	5,723	--	2,102	--	--	--	--	--
6/25/2021	2,600	0.28	6,069	--	2,040	--	--	--	--	--
6/26/2021	2,400	0.32	6,377	--	1,884	--	--	--	--	--
6/27/2021	2,500	0.21	4,457	--	1,808	--	--	--	--	--
6/28/2021	2,500	0.11	2,340	--	1,697	--	--	--	--	--
6/29/2021	2,400	0.36	7,115	--	1,804	--	--	--	--	--
6/30/2021	2,050	0.47	8,042	--	1,874	--	--	--	--	--
7/1/2021	1,900	0.40	6,356	--	1,360	--	--	--	--	--
7/2/2021	1,600	0.37	4,883	--	1,166	--	--	--	--	--
7/3/2021	2,000	0.40	6,653	--	1,749	--	--	--	--	--
7/4/2021	2,200	0.53	9,702	--	1,663	--	--	--	--	--
7/6/2021	1,600	0.81	10,784	--	1,806	--	--	--	--	--
7/7/2021	2,200	0.41	7,530	--	1,947	--	--	--	--	--
7/8/2021	2,300	0.39	7,537	--	1,449	--	--	--	--	--
7/9/2021	2,383	0.33	6,506	100,074	1,694	3.8	37	86.8	0.014	3.4
7/10/2021	2,267	0.35	6,710	101,061	1,609	4.0	37	90.1	0.015	3.7
7/11/2021	2,000	0.33	5,573	100,566	1,356	4.0	42	89.6	0.017	3.8

(a) July 5, 2021 was excluded due to low pulp production unrepresentative of typical operation.

Notes:

July 5, 2021 was excluded because the production was not representative of typical mill operation

APPENDIX H – CONTRACT LABORATORY REPORTS AND CHAINS OF CUSTODY FOR 40 CFR PART 63, SUBPART S IPT

ALS KELSO LABORATORY REPORTS – METHANOL AND HAP

June 30, 2021 Service Request No:K2107374

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: DHEC Order

Dear Daniel,

Enclosed are the results of the sample(s) submitted to our laboratory June 25, 2021
For your reference, these analyses have been assigned our service request number **K2107374.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A. Wolf
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
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ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: New-Indy Containerboard

Project: DHEC Order

Sample Matrix: Water

Service Request: K2107374

Date Received: 06/25/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Twenty nine water samples were received for analysis at ALS Environmental on 06/25/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method NCASI MeOH-94.03, 06/29/2021: Several samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Approved by Sydney A Wolfe

Date 06/30/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 2-A Foul Cond. Inlet 6/21 Composite **Lab ID: K2107374-004**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2000			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	24			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 6/23 Composite **Lab ID: K2107374-008**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1700			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	8.7			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	17			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet (6/23 1245) **Lab ID: K2107374-009**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1600			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	8.5			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	17			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet (6/23 1250) **Lab ID: K2107374-010**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	51			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2-A Foul Cond. Inlet (6/23 1440) **Lab ID: K2107374-011**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1700			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.9			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	20			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet (6/23 1435) **Lab ID: K2107374-012**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	170			0.50	ug/mL	NCASI MeOH-94.03
Acetaldehyde	2.1			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet (6/23 1545) **Lab ID: K2107374-013**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1900			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	8.4			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	22			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet (6/23 1550) **Lab ID: K2107374-014**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	190			0.50	ug/mL	NCASI MeOH-94.03
Acetaldehyde	2.5			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 3-A PM Whitewater (6/23 1548) **Lab ID: K2107374-015**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	6.1			0.50	ug/mL	NCASI MeOH-94.03

SAMPLE DETECTION SUMMARY

CLIENT ID: 2-A Foul Cond. Inlet (6/23 1600) **Lab ID: K2107374-016**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1900			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.5			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	21			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet (6/23 1610) **Lab ID: K2107374-017**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	200			0.50	ug/mL	NCASI MeOH-94.03
Acetaldehyde	2.5			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet (6/23 1645) **Lab ID: K2107374-018**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2000			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.3			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	19			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet (6/23 1650) **Lab ID: K2107374-019**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	200			0.50	ug/mL	NCASI MeOH-94.03
Acetaldehyde	2.2			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 3-A PM Whitewater (6/23 1620) **Lab ID: K2107374-020**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	8.2			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2-A Foul Cond. Inlet (6/23 1745) **Lab ID: K2107374-021**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2100			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.8			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	21			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet (6/23 1750) **Lab ID: K2107374-022**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	200			0.50	ug/mL	NCASI MeOH-94.03
Acetaldehyde	2.2			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 3-A PM Whitewater (6/23 1740) **Lab ID: K2107374-023**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	14			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2-A Foul Cond. Inlet (6/23 1900) **Lab ID: K2107374-024**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2200			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	8.0			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	23			1.0	ug/mL	NCASI HAPS-99.01

SAMPLE DETECTION SUMMARY

CLIENT ID: 2-B Foul Cond. Outlet (6/23 1905) **Lab ID: K2107374-025**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	310			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.2			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.7			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet (6/23 2050) **Lab ID: K2107374-026**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2200			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	8.2			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	23			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet (6/23 2055) **Lab ID: K2107374-027**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	310			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.2			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	4.0			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet (6/23 2210) **Lab ID: K2107374-028**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2100			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	10			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	27			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet (6/23 2215) **Lab ID: K2107374-029**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	330			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.4			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	4.3			1.0	ug/mL	NCASI HAPS-99.01

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: New-Indy Containerboard **Service Request:**K2107374
Project: DHEC Order

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2107374-004	2-A Foul Cond. Inlet 6/21 Composite	6/21/2021	0812
K2107374-008	2-A Foul Cond. Inlet 6/23 Composite	6/23/2021	0800
K2107374-009	2-A Foul Cond. Inlet (6/23 1245)	6/23/2021	1245
K2107374-010	2-B Foul Cond. Outlet (6/23 1250)	6/23/2021	1250
K2107374-011	2-A Foul Cond. Inlet (6/23 1440)	6/23/2021	1440
K2107374-012	2-B Foul Cond. Outlet (6/23 1435)	6/23/2021	1435
K2107374-013	2-A Foul Cond. Inlet (6/23 1545)	6/23/2021	1545
K2107374-014	2-B Foul Cond. Outlet (6/23 1550)	6/23/2021	1550
K2107374-015	3-A PM Whitewater (6/23 1548)	6/23/2021	1548
K2107374-016	2-A Foul Cond. Inlet (6/23 1600)	6/23/2021	1600
K2107374-017	2-B Foul Cond. Outlet (6/23 1610)	6/23/2021	1610
K2107374-018	2-A Foul Cond. Inlet (6/23 1645)	6/23/2021	1645
K2107374-019	2-B Foul Cond. Outlet (6/23 1650)	6/23/2021	1650
K2107374-020	3-A PM Whitewater (6/23 1620)	6/23/2021	1620
K2107374-021	2-A Foul Cond. Inlet (6/23 1745)	6/23/2021	1745
K2107374-022	2-B Foul Cond. Outlet (6/23 1750)	6/23/2021	1750
K2107374-023	3-A PM Whitewater (6/23 1740)	6/23/2021	1740
K2107374-024	2-A Foul Cond. Inlet (6/23 1900)	6/23/2021	1900
K2107374-025	2-B Foul Cond. Outlet (6/23 1905)	6/23/2021	1905
K2107374-026	2-A Foul Cond. Inlet (6/23 2050)	6/23/2021	2050
K2107374-027	2-B Foul Cond. Outlet (6/23 2055)	6/23/2021	2055
K2107374-028	2-A Foul Cond. Inlet (6/23 2210)	6/23/2021	2210
K2107374-029	2-B Foul Cond. Outlet (6/23 2215)	6/23/2021	2215

ALS

116722

CHAIN OF CUSTODY
116722

001

SR# K2107374

COC Set_____of_____

COC#_____________

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Page 1 of ~~4~~ 5

Project Name DHEC Order
Project Number:
Project Manager Dan Mallett
Company
Address
Phone # (803) 981-8010
email
Sampler Signature
Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2-A Foul Cond. Inlet		6-21-21	0812	WW	1	X	X						Composite
2. 2-A Foul cond. Inlet		6-21-21	1200	WW	1	X	X						before
3. 2-A Foul cond. Inlet		6-21-21	1605	WW	1	X	X						Analysis
4. 2-A Foul cond. Inlet		6-23-21	0800	WW	1	X	X						composite with 1200 + 1600
5. 2-A Foul cond. Inlet		6-23-21	1245	WW	1	X	X						Analyze Individually
6. 2-A Foul cond. Inlet		6-23-21	1200	WW	1	X	X						composite with 0800 + 1600
7. 2-A Foul Cond. Inlet		6-23-21	1600	WW	1	X	X						composite with 0800 + 1200
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#________________
Bill To:________________

Turnaround Requirements

____ 24 hr. ✓ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Ref Secure Area Signature	Signature	Ref Secure Area Signature	Signature	Signature
Garness Harris Printed Name	Ref. Secure Area Printed Name	Garness Harris Printed Name	Ref Secure Area Printed Name	Printed Name	Cody Graves Printed Name
New Indy Firm	New Indy Firm	New Indy Firm	New Indy Firm	NEW Indy Firm	ALS Firm
6-21-21 / 0821 Date/Time	6-21-21 / 0821 Date/Time	6-23-21 0805 Date/Time	6-23-21 0805 Date/Time	Date/Time	6/25/21 1145 Date/Time
6-21-21 / 1205	6-21-21 / 1205	6-23-21 1255 6-23-21 1205	6-23-21 1255 6-23-21 1205		
6-21-21 / 1610	6-21-21 / 1610	6-23-21 1620	6-23-21 1620		

ALS

116722

CHAIN OF CUSTODY

116722

001

SR# K2107374

COC Set_____of_____

COC#__________

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www.alsglobal.com

Page 1 of 1

2 of 5

Project Name DHEC Order

Project Number:

Project Manager Dan Mallett

Company

Address

Phone # (803)981-8018

email

Sampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2-B Foul Cond Outlet		6-23-21	1250	WW	1	X	X						
2. 2-A Foul Cond Inlet		6-23-21	1440	WW	1	X	X						
3. 2-B Foul Cond Outlet		6-23-21	1435	WW	1	X	X						
4. 2-A Foul Cond Inlet		6-23-21	1545	WW	1	X	X						
5. 2-B Foul Cond Outlet		6-23-21	1550	WW	1	X	X						
6. 3-A PM White Water		6-23-21	1548	WW	1	X	X						
7.		[illegible]											
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.

___ 5 Day

___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garness Harris	Ref Secure Area	Alan Dale Robinson	Ref Secure Area	Alan Dale Robinson	Ref Secure Area
Signature	Signature	Signature	Signature	Signature	Signature
Garness Harris	Ref Secure Area	Alan Dale Robinson	Ref Secure Area	Alan Dale Robinson	Ref Secure Area
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy	New Indy	New Indy
Firm	Firm	Firm	Firm	Firm	Firm
6-23-21 1255	6-23-21 1255	6-23-21 1445	6-23-21 1445	6-23-21 1555	6-23-21 1555
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Received: Cody Graves
ALS 6/25/21 1145

116722

CHAIN OF CUSTODY

116722

001

SR# K2107374

COC Set_____of_____

COC#__________

Page ~~1 of 1~~ 3 of 5

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name DHEC Order

Project Number:

Project Manager Don Mallett

Company

Address

Phone # (803) 981-8018

email

Sampler Signature

Sampler Printed Name

	CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1.	2A Foul Cond Inlet		6-23-21	1600	WW	1	x	x						Analyze individually
2.	2B Foul Cond Outlet		6-23-21	1610	WW	1	x	x						
3.	2A Foul Cond Inlet		6-23-21	1645	WW	1	x	x						
4.	2B Foul Cond Outlet		6-23-21	1650	WW	1	x	x						
5.	3A PM Whitewater		6-23-21	1620	WW	1	x	x						
6.														
7.														
8.														
9.														
10.														

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.

___ 5 Day

___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Alan Dale Robinson	Ref Secure Area	Alan Dale Robinson	Ref Secure Area		
Printed Name	Alan Dale Robinson	Ref Secure Area	Alan Dale Robinson	Ref Secure Area		Cody Graves
Firm	New Indy	New Indy	New Indy	New Indy		ALS
Date/Time	6-23-21 16:15	6-23-21 1615	6-23-21 1655	6-23-21 1655		6/25/21 1145

116722

CHAIN OF CUSTODY

116722

001

SR# K2107374

COC Set_____of_____

COC#__________ 4 5

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
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Project Name DHEC Ordr

Project Number:

Project Manager Don Mallett

Company

Address

Phone # (803) 981-8018

email

Sampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A Foul Cond Inlet		6-23-21	1745	WW	1	x	x						
2. 2B Foul Cond Outlet		6-23-21	1750	WW	1	x	x						
3. 3A PM whitewater		6-23-21	1740	WW	1	x	x						
4. 2A Foul Cond. Inlet		6-23-21	1900	WW	1	x	x						
5. 2B Foul Cond. Outlet		6-23-21	1905	WW	1	x	x						
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#______________

Bill To:______________

Turnaround Requirements

___ 24 hr.
✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Alan Dale Robinson	Ref Secure Area	Alan Dale Robinson	Ref Secure Area		
Printed Name	Alan Dale Robinson	Ref Secure Area	Alan Dale Robinson	Ref Secure Area		Cody Graves
Firm	New Indy	New Indy	New Indy	New Indy		ALS
Date/Time	6-23-21 1755	6-23-21	6-23-21 1910	6-23-21		6/25/21 1145

116722

CHAIN OF CUSTODY

116722

001

SR# K2107374

COC Set_____of_____

COC#______________

Page 5 of 5

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company:
Address:
Phone # (803) 981-8010
email:
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A Foul Cond Inlet		6-23-21	2050		1	x	x						
2. 2B Foul Cond Outlet		6-23-21	2055		1	x	x						
3. 2A Foul Cond Inlet		6-23-21	2210		1	x	x						
4. 2B Foul Cond Outlet		6-23-21	2215		1	x	x						
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#________________

Bill To:________________

Turnaround Requirements

____ 24 hr.   ✓ 48 hr.

____ 5 Day

____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Alan Dale Robinson	Signature: Ref Secure Area	Signature: Alan Dale Robinson	Signature: Ref Secure Area	Signature:	Signature:
Printed Name: Alan Dale Robinson	Printed Name: Ref Secure Area	Printed Name: Alan Dale Robinson	Printed Name: Ref Secure Area	Printed Name:	Printed Name: Cody Graves
Firm: New Indy	Firm: New Indy	Firm: New Indy	Firm: New Indy	Firm:	Firm: ALS
Date/Time: 6-23-21 2100	Date/Time: 6-23-21 2100	Date/Time: 6-23-21 2220	Date/Time: 6-23-21 2220	Date/Time:	Date/Time: 6/25/21 1145

PM SW

Cooler Receipt and Preservation Form

Client New Indy Service Request K21 07374

Received: 6/25/21 Opened: 6/25/21 By: CG Unloaded: 6/25/21 By: CG

1. Samples were received via? *USPS* *Fed Ex* [✓ *UPS*] *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) [✓ *Cooler*] *Box* *Envelope* *Other* ______ *NA*
3. Were custody seals on coolers? NA [✓ Y] N If yes, how many and where? 1 Front
   If present, were custody seals intact? [✓ Y] N If present, were they signed and dated? [✓ Y] N
4. Was a Temperature Blank present in cooler? NA Y [✓ N] If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / [✓ NA]	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
—	3.2	I R02		—	—	1Z2214300192995381	

6. Packing material: *Inserts* *Baggies* [✓ *Bubble Wrap*] *Gel Packs* [✓ *Wet Ice*] *Dry Ice* *Sleeves* ______
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA [✓ Y] N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions:

RUSH

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory’s NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: New-Indy Containerboard
Service Request: K2107374
Project: DHEC Order/

Sample Name: 2-A Foul Cond. Inlet 6/21 Composite
Date Collected: 06/21/21
Lab Code: K2107374-004
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet 6/23 Composite
Date Collected: 06/23/21
Lab Code: K2107374-008
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet (6/23 1245)
Date Collected: 06/23/21
Lab Code: K2107374-009
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond. Outlet (6/23 1250)
Date Collected: 06/23/21
Lab Code: K2107374-010
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Client: New-Indy Containerboard
Project: DHEC Order/

Service Request: K2107374

Sample Name: 2-A Foul Cond. Inlet (6/23 1440)
Lab Code: K2107374-011
Sample Matrix: Water

Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond. Outlet (6/23 1435)
Lab Code: K2107374-012
Sample Matrix: Water

Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet (6/23 1545)
Lab Code: K2107374-013
Sample Matrix: Water

Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond. Outlet (6/23 1550)
Lab Code: K2107374-014
Sample Matrix: Water

Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

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Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107374

Sample Name: 3-A PM Whitewater (6/23 1548)
Lab Code: K2107374-015
Sample Matrix: Water
Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet (6/23 1600)
Lab Code: K2107374-016
Sample Matrix: Water
Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond. Outlet (6/23 1610)
Lab Code: K2107374-017
Sample Matrix: Water
Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet (6/23 1645)
Lab Code: K2107374-018
Sample Matrix: Water
Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Analyst Summary report

Client: New-Indy Containerboard
Service Request: K2107374
Project: DHEC Order/

Sample Name: 2-B Foul Cond. Outlet (6/23 1650)
Date Collected: 06/23/21
Lab Code: K2107374-019
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3-A PM Whitewater (6/23 1620)
Date Collected: 06/23/21
Lab Code: K2107374-020
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet (6/23 1745)
Date Collected: 06/23/21
Lab Code: K2107374-021
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond. Outlet (6/23 1750)
Date Collected: 06/23/21
Lab Code: K2107374-022
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Client: New-Indy Containerboard
Service Request: K2107374
Project: DHEC Order/

Sample Name: 3-A PM Whitewater (6/23 1740)
Date Collected: 06/23/21
Lab Code: K2107374-023
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet (6/23 1900)
Date Collected: 06/23/21
Lab Code: K2107374-024
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond. Outlet (6/23 1905)
Date Collected: 06/23/21
Lab Code: K2107374-025
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet (6/23 2050)
Date Collected: 06/23/21
Lab Code: K2107374-026
Date Received: 06/25/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107374

Sample Name: 2-B Foul Cond. Outlet (6/23 2055)
Lab Code: K2107374-027
Sample Matrix: Water
Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet (6/23 2210)
Lab Code: K2107374-028
Sample Matrix: Water
Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond. Outlet (6/23 2215)
Lab Code: K2107374-029
Sample Matrix: Water
Date Collected: 06/23/21
Date Received: 06/25/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Results

ALS Environmental—Kelso Laboratory
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Semivolatile Organic Compounds by GC

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www.alsglobal.com

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/21/21 08:12
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet 6/21 Composite	**Units:**	ug/mL
Lab Code:	K2107374-004	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**		1.0	1	06/29/21 14:41	6/28/21	
Acetaldehyde	**24**		1.0	1	06/29/21 14:41	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/29/21 14:41	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 08:00
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet 6/23 Composite	**Units:**	ug/mL
Lab Code:	K2107374-008	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**8.7**	1.0	1	06/29/21 15:42	6/28/21	
Acetaldehyde	**17**	1.0	1	06/29/21 15:42	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 15:42	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 12:45
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1245)	**Units:**	ug/mL
Lab Code:	K2107374-009	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**8.5**	1.0	1	06/29/21 16:02	6/28/21	
Acetaldehyde	**17**	1.0	1	06/29/21 16:02	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 16:02	6/28/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107374
Date Collected: 06/23/21 12:50
Date Received: 06/25/21 11:45

Sample Name: 2-B Foul Cond. Outlet (6/23 1250)
Lab Code: K2107374-010

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/29/21 16:22	6/28/21	
Acetaldehyde	ND U	1.0	1	06/29/21 16:22	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 16:22	6/28/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 14:40
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1440)	**Units:**	ug/mL
Lab Code:	K2107374-011	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.9**	1.0	1	06/29/21 16:43	6/28/21	
Acetaldehyde	**20**	1.0	1	06/29/21 16:43	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 16:43	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 14:35
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1435)	**Units:**	ug/mL
Lab Code:	K2107374-012	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/29/21 17:03	6/28/21	
Acetaldehyde	**2.1**	1.0	1	06/29/21 17:03	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 17:03	6/28/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107374
Date Collected: 06/23/21 15:45
Date Received: 06/25/21 11:45

Sample Name: 2-A Foul Cond. Inlet (6/23 1545)
Lab Code: K2107374-013

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**8.4**		1.0	1	06/29/21 17:23	6/28/21	
Acetaldehyde	**22**		1.0	1	06/29/21 17:23	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/29/21 17:23	6/28/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107374
Date Collected: 06/23/21 15:50
Date Received: 06/25/21 11:45

Sample Name: 2-B Foul Cond. Outlet (6/23 1550)
Lab Code: K2107374-014

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/29/21 17:44	6/28/21	
Acetaldehyde	**2.5**	1.0	1	06/29/21 17:44	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 17:44	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 15:48
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	3-A PM Whitewater (6/23 1548)	**Units:**	ug/mL
Lab Code:	K2107374-015	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/29/21 18:04	6/28/21	
Acetaldehyde	ND U	1.0	1	06/29/21 18:04	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 18:04	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 16:00
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1600)	**Units:**	ug/mL
Lab Code:	K2107374-016	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.5**		1.0	1	06/29/21 18:25	6/28/21	
Acetaldehyde	**21**		1.0	1	06/29/21 18:25	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/29/21 18:25	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 16:10
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1610)	**Units:**	ug/mL
Lab Code:	K2107374-017	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/29/21 18:45	6/28/21	
Acetaldehyde	**2.5**	1.0	1	06/29/21 18:45	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 18:45	6/28/21	

Client:	New-Indy Containerboard		**Service Request:**	K2107374
Project:	DHEC Order		**Date Collected:**	06/23/21 16:45
Sample Matrix:	Water		**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1645)		**Units:**	ug/mL
Lab Code:	K2107374-018		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.3**		1.0	1	06/29/21 19:06	6/28/21	
Acetaldehyde	**19**		1.0	1	06/29/21 19:06	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/29/21 19:06	6/28/21	

Analytical Report

Client: New-Indy Containerboard
Service Request: K2107374
Project: DHEC Order
Date Collected: 06/23/21 16:50
Sample Matrix: Water
Date Received: 06/25/21 11:45

Sample Name: 2-B Foul Cond. Outlet (6/23 1650)
Units: ug/mL
Lab Code: K2107374-019
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/29/21 19:26	6/28/21	
Acetaldehyde	**2.2**	1.0	1	06/29/21 19:26	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 19:26	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 16:20
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	3-A PM Whitewater (6/23 1620)	**Units:**	ug/mL
Lab Code:	K2107374-020	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/29/21 19:46	6/28/21	
Acetaldehyde	ND U	1.0	1	06/29/21 19:46	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 19:46	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 17:45
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1745)	**Units:**	ug/mL
Lab Code:	K2107374-021	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.8**	1.0	1	06/29/21 20:07	6/28/21	
Acetaldehyde	**21**	1.0	1	06/29/21 20:07	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 20:07	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 17:50
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1750)	**Units:**	ug/mL
Lab Code:	K2107374-022	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	06/29/21 20:27	6/28/21	
Acetaldehyde	**2.2**		1.0	1	06/29/21 20:27	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/29/21 20:27	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 17:40
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	3-A PM Whitewater (6/23 1740)	**Units:**	ug/mL
Lab Code:	K2107374-023	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/29/21 20:47	6/28/21	
Acetaldehyde	ND U	1.0	1	06/29/21 20:47	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 20:47	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 19:00
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1900)	**Units:**	ug/mL
Lab Code:	K2107374-024	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**8.0**	1.0	1	06/29/21 21:07	6/28/21	
Acetaldehyde	**23**	1.0	1	06/29/21 21:07	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 21:07	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 19:05
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1905)	**Units:**	ug/mL
Lab Code:	K2107374-025	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.2**		1.0	1	06/29/21 21:27	6/28/21	
Acetaldehyde	**3.7**		1.0	1	06/29/21 21:27	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/29/21 21:27	6/28/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 20:50
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 2050)	**Units:**	ug/mL
Lab Code:	K2107374-026	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**8.2**		1.0	1	06/29/21 21:47	6/28/21	
Acetaldehyde	**23**		1.0	1	06/29/21 21:47	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/29/21 21:47	6/28/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 20:55
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 2055)	**Units:**	ug/mL
Lab Code:	K2107374-027	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.2**		1.0	1	06/29/21 22:07	6/28/21	
Acetaldehyde	**4.0**		1.0	1	06/29/21 22:07	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/29/21 22:07	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 22:10
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 2210)	**Units:**	ug/mL
Lab Code:	K2107374-028	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**10**	1.0	1	06/29/21 23:07	6/28/21	
Acetaldehyde	**27**	1.0	1	06/29/21 23:07	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 23:07	6/28/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107374
Date Collected: 06/23/21 22:15
Date Received: 06/25/21 11:45

Sample Name: 2-B Foul Cond. Outlet (6/23 2215)
Lab Code: K2107374-029

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.4**	1.0	1	06/29/21 23:27	6/28/21	
Acetaldehyde	**4.3**	1.0	1	06/29/21 23:27	6/28/21	
Propionaldehyde	ND U	1.0	1	06/29/21 23:27	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/21/21 08:12
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet 6/21 Composite	**Units:**	ug/mL
Lab Code:	K2107374-004	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2000**	5.0	10	06/29/21 23:47	6/28/21	

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Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107374
Date Collected: 06/23/21 08:00
Date Received: 06/25/21 11:45

Sample Name: 2-A Foul Cond. Inlet 6/23 Composite
Lab Code: K2107374-008

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1700**	5.0	10	06/29/21 05:27	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 12:45
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1245)	**Units:**	ug/mL
Lab Code:	K2107374-009	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1600**	5.0	10	06/30/21 00:07	6/28/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 12:50
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1250)	**Units:**	ug/mL
Lab Code:	K2107374-010	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**51**	0.50	1	06/29/21 16:22	6/28/21	

Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2107374
Project:	DHEC Order		**Date Collected:**	06/23/21 14:40
Sample Matrix:	Water		**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1440)		**Units:**	ug/mL
Lab Code:	K2107374-011		**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1700**	5.0	10	06/30/21 00:26	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 14:35
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1435)	**Units:**	ug/mL
Lab Code:	K2107374-012	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**170**	0.50	1	06/29/21 17:03	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 15:45
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1545)	**Units:**	ug/mL
Lab Code:	K2107374-013	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1900**	5.0	10	06/29/21 07:29	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 15:50
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1550)	**Units:**	ug/mL
Lab Code:	K2107374-014	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**190**	0.50	1	06/29/21 17:44	6/28/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 15:48
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	3-A PM Whitewater (6/23 1548)	**Units:**	ug/mL
Lab Code:	K2107374-015	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**6.1**	0.50	1	06/29/21 18:04	6/28/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 16:00
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1600)	**Units:**	ug/mL
Lab Code:	K2107374-016	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1900**	5.0	10	06/29/21 08:26	6/28/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107374
Date Collected: 06/23/21 16:10
Date Received: 06/25/21 11:45

Sample Name: 2-B Foul Cond. Outlet (6/23 1610)
Lab Code: K2107374-017

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**200**	0.50	1	06/29/21 18:45	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 16:45
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1645)	**Units:**	ug/mL
Lab Code:	K2107374-018	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2000**	5.0	10	06/29/21 09:06	6/28/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 16:50
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1650)	**Units:**	ug/mL
Lab Code:	K2107374-019	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**200**	0.50	1	06/29/21 19:26	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 16:20
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	3-A PM Whitewater (6/23 1620)	**Units:**	ug/mL
Lab Code:	K2107374-020	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**8.2**	0.50	1	06/29/21 19:46	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 17:45
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1745)	**Units:**	ug/mL
Lab Code:	K2107374-021	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2100**	5.0	10	06/29/21 10:03	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 17:50
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1750)	**Units:**	ug/mL
Lab Code:	K2107374-022	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**200**	0.50	1	06/29/21 20:27	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 17:40
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	3-A PM Whitewater (6/23 1740)	**Units:**	ug/mL
Lab Code:	K2107374-023	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**14**	0.50	1	06/29/21 20:47	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 19:00
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 1900)	**Units:**	ug/mL
Lab Code:	K2107374-024	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2200**	5.0	10	06/29/21 11:01	6/28/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 19:05
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 1905)	**Units:**	ug/mL
Lab Code:	K2107374-025	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**310**	0.50	1	06/29/21 21:27	6/28/21	

Printed 6/30/2021 5:51:44 PM

Superset Reference:21-0000595122 rev 00

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 20:50
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 2050)	**Units:**	ug/mL
Lab Code:	K2107374-026	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2200**	5.0	10	06/29/21 11:40	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 20:55
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 2055)	**Units:**	ug/mL
Lab Code:	K2107374-027	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**310**	0.50	1	06/29/21 22:07	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 22:10
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-A Foul Cond. Inlet (6/23 2210)	**Units:**	ug/mL
Lab Code:	K2107374-028	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2100**	5.0	10	06/29/21 12:59	6/28/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	06/23/21 22:15
Sample Matrix:	Water	**Date Received:**	06/25/21 11:45
Sample Name:	2-B Foul Cond. Outlet (6/23 2215)	**Units:**	ug/mL
Lab Code:	K2107374-029	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**330**	0.50	1	06/29/21 23:27	6/28/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107374
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ2111784-04

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	06/28/21 14:51	6/28/21	
Acetaldehyde	ND	U	1.0	1	06/28/21 14:51	6/28/21	
Propionaldehyde	ND	U	1.0	1	06/28/21 14:51	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2111785-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/28/21 15:35	6/28/21	
Acetaldehyde	ND U	1.0	1	06/28/21 15:35	6/28/21	
Propionaldehyde	ND U	1.0	1	06/28/21 15:35	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2111789-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	06/28/21 16:19	6/28/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107374
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2111790-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	06/28/21 17:42	6/28/21	

July 02, 2021 Service Request No:K2107495

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: DHEC Order

Dear Daniel,

Enclosed are the results of the sample(s) submitted to our laboratory June 29, 2021
For your reference, these analyses have been assigned our service request number **K2107495.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A Wolf

Sydney A. Wolf
Project Manager

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107495
Date Received: 06/29/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Twenty eight water samples were received for analysis at ALS Environmental on 06/29/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method Composite, :Several samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Approved by Sydney A Wolfe

Date 07/02/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 3A Paper Machine WW (6/24 1000) **Lab ID: K2107495-005**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	13			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/24 1115) **Lab ID: K2107495-006**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	16			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/24 1210) **Lab ID: K2107495-007**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	18			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/24 1331) **Lab ID: K2107495-008**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	22			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/24 1450) **Lab ID: K2107495-009**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	24			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A Foul Cond. Inlet (6/24 1510) **Lab ID: K2107495-010**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2500			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	11			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	25			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B Foul Cond. Outlet (6/24 1515) **Lab ID: K2107495-011**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	420			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	2.1			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	5.0			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 3A Paper Machine WW (6/24 1600) **Lab ID: K2107495-012**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	33			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A Foul Cond. Inlet (6/24 1700) **Lab ID: K2107495-013**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2600			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	25			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B Foul Cond. Outlet (6/24 1705) **Lab ID: K2107495-014**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	420			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	2.1			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	4.6			1.0	ug/mL	NCASI HAPS-99.01

SAMPLE DETECTION SUMMARY

CLIENT ID: 2A Foul Cond. Inlet (6/24 1845) **Lab ID: K2107495-015**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2500			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	24			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B Foul Cond. Outlet (6/24 1850) **Lab ID: K2107495-016**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	440			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	2.1			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	4.8			1.0	ug/mL	NCASI HAPS-99.01

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: New-Indy Containerboard **Service Request:**K2107495
Project: DHEC Order

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2107495-005	3A Paper Machine WW (6/24 1000)	6/24/2021	1000
K2107495-006	3A Paper Machine WW (6/24 1115)	6/24/2021	1115
K2107495-007	3A Paper Machine WW (6/24 1210)	6/24/2021	1210
K2107495-008	3A Paper Machine WW (6/24 1331)	6/24/2021	1331
K2107495-009	3A Paper Machine WW (6/24 1450)	6/24/2021	1450
K2107495-010	2A Foul Cond. Inlet (6/24 1510)	6/24/2021	1510
K2107495-011	2B Foul Cond. Outlet (6/24 1515)	6/24/2021	1515
K2107495-012	3A Paper Machine WW (6/24 1600)	6/24/2021	1600
K2107495-013	2A Foul Cond. Inlet (6/24 1700)	6/24/2021	1700
K2107495-014	2B Foul Cond. Outlet (6/24 1705)	6/24/2021	1705
K2107495-015	2A Foul Cond. Inlet (6/24 1845)	6/24/2021	1845
K2107495-016	2B Foul Cond. Outlet (6/24 1850)	6/24/2021	1850

ALS

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CHAIN OF CUSTODY
116722

001

SR# K2107495

COC Set____of____

COC#________

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name

Project Number: DHEC Order

Project Manager Dan Mallett

Company

Address

Phone # (803) 981-8010

email Dan.mallett@new-indycb.com

Sampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A Foul Cond. Inlet		6/24/21	0800	WW	1	x	x						Composite
2. 2A Foul Cond. Inlet		6/24/21	1200	WW	1	x	x						before
3. 2A Foul Cond Inlet		6/24/21	1600	WW	1	x	x						analysis
4. 3A Paper Machine WW		6/24/21	1000	WW	1	x	x						
5. 3A Paper Machine WW		6/24/21	1115	WW	1	x	x						
6. 3A Paper Machine WW		6/24/21	1210	WW	1	x	x						
7. 3A Paper Machine WW		6/24/21	1331	WW	1	x	x						
8. 3A Paper Machine WW		6/24/21	1456	WW	1	x	✓						
9.													
10.													

Prioritize 48-hr * on these

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- ___ V. EDD

Invoice Information

P.O.#________

Bill To:________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time are crucial for sample identification *

pg 1 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Dale Robinson	Ref Secure Area		Ref Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
Dale Robinson	Ref Secure Area	Katie VanValkinburgh	Ref Secure Area		Naomi Pedersen
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	TRC	New Indy		ALS
Firm	Firm	Firm	Firm	Firm	Firm
6-24-21 / 805	6-24-21 / 805	6-24-21 / 1010	6-24-21 / 1010		6/29/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
6-24-21 / 1205	6-24-21 / 1205	6-24-21 / 1120	6-24-21 / 1120		
6-24-21 / 1605	6-24-21 / 1605	6-24-21 / 12.15	6-24-21 / 1215		
		6-24-21 / 1340	6-24-21 / 1340		

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CHAIN OF CUSTODY

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001

SR# K2107495

COC Set____of____

COC#________

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Page 1 of 1

Project Name DHEC Order

Project Number:

Project Manager Dan Mallett

Company

Address

Phone # (803)981-8010

email Dan.mallett@new-indycb.com

Sampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A Foul Cond. Inlet		6-24-21	1510	WW	1	x	x						
2. 2B Foul Cond. Outlet		6-24-21	1515	WW	1	x	x						
3. 3A Paper Machine WW		6-24-21	1600	WW	1	x	x						
4. 2A Foul Cond Inlet		6-24-21	1700	WW	1	x	x						
5. 2B Foul Cond Outlet		6-24-21	1705	WW	1	x	x						
6. 2A Foul Cond. Inlet		6-24-21	1845	WW	1	x	x						
7. 2B Foul Cond Outlet		6-24-21	1850	WW	1	x	x						
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#________

Bill To:________

Turnaround Requirements

___ 24 hr.
___ 5 Day
___ Standard
✓ 48 hr.

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____ (Circle One)

Special Instructions/Comments:

x Sample date & time crucial for identification

pg 2 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Dale Robinson	RcF Secure Area		RcF Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
Dale Robinson	RcF Secure Area	Katie VanValkinburgh	RcF Secure Area		Naomi Pedersen
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	TRC	New Indy		ALS
Firm	Firm	Firm	Firm	Firm	Firm
6-24-21 1515	6-24-21 1515	6-24-21 1605	6-24-21 1605		6/29/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

6-24-21 1520	6-24-21 1520
6-24-21 1705	6-24-21 1709
6-24-21 1710	6-24-21 1710

ALS

116722

CHAIN OF CUSTODY

116722

001

SR# K2107495

COC Set_____of_____

COC#____________

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Page 1 of 1

Project Name DHEC Order

Project Number:

Project Manager Dan Mallett

Company

Address

Phone # (803) 981-8010

email dan.mallett@new-indycb.com

Sampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A Foul Cond. Inlet		6-25-21	0805	WW	1	x	x						Composite
2. 2A Foul Cond. Inlet		6-25-21	1205	WW	1	x	x						before
3. 2A Foul Cond Inlet		6-25-21	1600	WW	1	x	x						analysis
4.													
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

* Sample Date and Time crucial for sample identification *

* Prioritize composite sample for 48-hr turn-around

pg 4 of 9

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Dale Robinson	Ref Secure Area				
Printed Name	Dale Robinson	Ref Secure Area				Naomi Pedersen
Firm	New Indy	New Indy				ALS
Date/Time	6-25-21 0810 6-25-21 1210 6-25-21 1605	6-25-21 0810 6-25-21 1210 6-25-21 1605				6/29/21 1030

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CHAIN OF CUSTODY

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001

SR# K2107495

COC Set____of____

COC#____________

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name DHEC Order
Project Number:
Project Manager Dan Mallett
Company New Indy Container Board
Address 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone # (803) 981-8010
email Dan.mallett@new-indycb.com
Sampler Signature
Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	NCASI HAPS-99.01 / HAPS 14D	NCASI MeOH-94.03 / MeOH 30D	1	2	3	4	5	Remarks
1. 2A-Foul Cond Inlet		6-26-21	0800	WW	1	x	x						Composite
2. 2A-Foul Cond Inlet		6-26-21	1200	WW	1	x	x						before
3. 2A-Foul Cond Inlet		6-26-21	1600	WW	1	x	x						analysis
4.													
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#____________
Bill To:____________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

pg 7 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Dale Robinson	Ref secure area		Ref Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
Dale Robinson	Ref Secure Area	Garness Harris	Ref Secure Area		Naomi Pedersen
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy		ALS
Firm	Firm	Firm	Firm	Firm	Firm
6-26-21 0805	6-26-21 0805	6-26-21 1605	6-26-21 1605		6/29/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
6-26-21 1205	6-26-21 1205				

116722

CHAIN OF CUSTODY

116722

001

SR# K2107495

COC Set____of____

COC#____________

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name DHEC Order

Project Number:

Project Manager Dan Mallett

Company New Indy Container Board

Address 5300 Cureton Ferry Rd / Catawba, SC 29704

Phone # (803) 981-8010

email Dan.mallett@new-indycb.com

Sampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A - Foul Cond. Inlet		6-27-21	0800	WW	1	x	x						Composite before analysis
2. 2A - Foul Cond Inlet		6-27-21	1200	WW	1	x	x						
3. 2A - Foul Cond Inlet		6-27-21	1600	WW	1	x	x						
4.													
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#____________

Bill To:____________

Turnaround Requirements

___ 24 hr. [✓ 48 hr.]

___ 5 Day

___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

* Sample Date and Time crucial for sample identification *

pg 9 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Lauren Harris	ReF. Secure Area				
Signature	Signature	Signature	Signature	Signature	Signature
Gaeness Harris	ReF. Secure Area				Naomi Pedersen
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy				ALS
Firm	Firm	Firm	Firm	Firm	Firm
6-27-21 805	6-27-21 805				6/29/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
1205 1605	1205 1605				

PM SW

Cooler Receipt and Preservation Form

Client New Indy Service Request K21 07495

Received: 6/29/21 Opened: 6/29/21 By: AP Unloaded: 6/29/21 By: AP

1. Samples were received via? *USPS* *Fed Ex* [✓ *UPS*] *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) [✓ *Cooler*] *Box* *Envelope* *Other* ______ *NA*
3. Were custody seals on coolers? NA Y [✓ N] If yes, how many and where? ______

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA [✓ Y] N If yes, notate the temperature in the appropriate column below:

   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N

   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
1.4	—	1802	116722			1Z 221 430 01 9345 1019	

6. Packing material: *Inserts* *Baggies* [✓ *Bubble Wrap*] *Gel Packs* [✓ *Wet Ice*] *Dry Ice* *Sleeves* ______
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* [✓ NA] Y N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

RUSH

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: ______

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

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Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107495

Sample Name: 3A Paper Machine WW (6/24 1000)
Lab Code: K2107495-005
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/24 1115)
Lab Code: K2107495-006
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/24 1210)
Lab Code: K2107495-007
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/24 1331)
Lab Code: K2107495-008
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107495

Sample Name: 3A Paper Machine WW (6/24 1450)
Lab Code: K2107495-009
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2A Foul Cond. Inlet (6/24 1510)
Lab Code: K2107495-010
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2B Foul Cond. Outlet (6/24 1515)
Lab Code: K2107495-011
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/24 1600)
Lab Code: K2107495-012
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107495

Sample Name: 2A Foul Cond. Inlet (6/24 1700)
Lab Code: K2107495-013
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2B Foul Cond. Outlet (6/24 1705)
Lab Code: K2107495-014
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2A Foul Cond. Inlet (6/24 1845)
Lab Code: K2107495-015
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2B Foul Cond. Outlet (6/24 1850)
Lab Code: K2107495-016
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Results

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1317 South 13th Avenue, Kelso, WA 98626
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Semivolatile Organic Compounds by GC

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www.alsglobal.com

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 10:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1000)	**Units:**	ug/mL
Lab Code:	K2107495-005	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 16:31	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 16:31	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 16:31	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 11:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30

Sample Name:	3A Paper Machine WW (6/24 1115)	**Units:**	ug/mL
Lab Code:	K2107495-006	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/30/21 23:22	6/30/21	
Acetaldehyde	ND U	1.0	1	06/30/21 23:22	6/30/21	
Propionaldehyde	ND U	1.0	1	06/30/21 23:22	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2107495
Project:	DHEC Order		**Date Collected:**	06/24/21 12:10
Sample Matrix:	Water		**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1210)		**Units:**	ug/mL
Lab Code:	K2107495-007		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 17:31	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 17:31	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 17:31	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 13:31
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1331)	**Units:**	ug/mL
Lab Code:	K2107495-008	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 00:01	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 00:01	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 00:01	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 14:50
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1450)	**Units:**	ug/mL
Lab Code:	K2107495-009	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 00:21	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 00:21	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 00:21	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 15:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/24 1510)	**Units:**	ug/mL
Lab Code:	K2107495-010	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**11**	1.0	1	07/01/21 21:49	6/30/21	
Acetaldehyde	**25**	1.0	1	07/01/21 21:49	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 21:49	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 15:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/24 1515)	**Units:**	ug/mL
Lab Code:	K2107495-011	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**2.1**		1.0	1	07/01/21 01:01	6/30/21	
Acetaldehyde	**5.0**		1.0	1	07/01/21 01:01	6/30/21	
Propionaldehyde	ND	U	1.0	1	07/01/21 01:01	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 16:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1600)	**Units:**	ug/mL
Lab Code:	K2107495-012	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 01:21	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 01:21	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 01:21	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 17:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/24 1700)	**Units:**	ug/mL
Lab Code:	K2107495-013	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**	1.0	1	07/01/21 22:09	6/30/21	
Acetaldehyde	**25**	1.0	1	07/01/21 22:09	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 22:09	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 17:05
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/24 1705)	**Units:**	ug/mL
Lab Code:	K2107495-014	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**2.1**	1.0	1	07/01/21 17:51	6/30/21	
Acetaldehyde	**4.6**	1.0	1	07/01/21 17:51	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 17:51	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 18:45
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/24 1845)	**Units:**	ug/mL
Lab Code:	K2107495-015	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**	1.0	1	07/01/21 22:28	6/30/21	
Acetaldehyde	**24**	1.0	1	07/01/21 22:28	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 22:28	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 18:50
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/24 1850)	**Units:**	ug/mL
Lab Code:	K2107495-016	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**2.1**	1.0	1	07/01/21 18:11	6/30/21	
Acetaldehyde	**4.8**	1.0	1	07/01/21 18:11	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 18:11	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 10:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1000)	**Units:**	ug/mL
Lab Code:	K2107495-005	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**13**	0.50	1	07/01/21 16:31	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 11:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30

Sample Name:	3A Paper Machine WW (6/24 1115)	**Units:**	ug/mL
Lab Code:	K2107495-006	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**16**	0.50	1	06/30/21 23:22	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 12:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1210)	**Units:**	ug/mL
Lab Code:	K2107495-007	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**18**	0.50	1	07/01/21 17:31	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 13:31
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1331)	**Units:**	ug/mL
Lab Code:	K2107495-008	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**22**	0.50	1	07/01/21 00:01	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 14:50
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1450)	**Units:**	ug/mL
Lab Code:	K2107495-009	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**24**	0.50	1	07/01/21 00:21	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 15:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/24 1510)	**Units:**	ug/mL
Lab Code:	K2107495-010	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2500**	5.0	10	07/01/21 00:41	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 15:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/24 1515)	**Units:**	ug/mL
Lab Code:	K2107495-011	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**420**	0.50	1	07/01/21 01:01	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 16:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1600)	**Units:**	ug/mL
Lab Code:	K2107495-012	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**33**	0.50	1	07/01/21 01:21	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 17:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/24 1700)	**Units:**	ug/mL
Lab Code:	K2107495-013	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2600**	5.0	10	07/01/21 01:41	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 17:05
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/24 1705)	**Units:**	ug/mL
Lab Code:	K2107495-014	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**420**	0.50	1	07/01/21 17:51	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	06/24/21 18:45
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/24 1845)	**Units:**	ug/mL
Lab Code:	K2107495-015	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2500**	5.0	10	07/01/21 02:21	6/30/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107495
Date Collected: 06/24/21 18:50
Date Received: 06/29/21 10:30

Sample Name: 2B Foul Cond. Outlet (6/24 1850)
Lab Code: K2107495-016

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**440**	0.50	1	07/01/21 18:11	6/30/21	

QC Summary Forms

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ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112049-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/30/21 18:15	6/30/21	
Acetaldehyde	ND U	1.0	1	06/30/21 18:15	6/30/21	
Propionaldehyde	ND U	1.0	1	06/30/21 18:15	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107495
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112046-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	06/30/21 16:18	6/30/21	

July 02, 2021 Service Request No:K2107496

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: DHEC Order

Dear Daniel,

Enclosed are the results of the sample(s) submitted to our laboratory June 29, 2021
For your reference, these analyses have been assigned our service request number **K2107496.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A Wolf

Sydney A. Wolf
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

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Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107496
Date Received: 06/29/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Twenty seven water samples were received for analysis at ALS Environmental on 06/29/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method NCASI MeOH-94.03, 07/01/2021:Several samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Approved by Sydney A Wolfe

Date 07/02/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 3A Paper Machine WW (6/24 1115) **Lab ID: K2107496-001**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	16			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A Foul Cond. Inlet (6/24 1510) **Lab ID: K2107496-002**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2400			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	25			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B Foul Cond. Inlet (6/24 1515) **Lab ID: K2107496-003**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	430			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.9			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	4.1			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 3A Paper Machine WW (6/25 0817) **Lab ID: K2107496-004**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	27			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/25 0924) **Lab ID: K2107496-005**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	38			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/25 1030) **Lab ID: K2107496-006**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	43			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A Foul Cond. Inlet (6/25 1035) **Lab ID: K2107496-007**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2600			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	26			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B Foul Cond. Outlet (6/25 1040) **Lab ID: K2107496-008**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	490			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	2.1			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	4.9			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2A Foul Cond. Inlet (6/25 1205) **Lab ID: K2107496-009**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2600			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	11			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	24			1.0	ug/mL	NCASI HAPS-99.01

SAMPLE DETECTION SUMMARY

CLIENT ID: 2B Foul Cond. Outlet (6/25 1210) **Lab ID: K2107496-010**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	460			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	2.0			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	4.4			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 3A Paper Machine WW (6/25 1200) **Lab ID: K2107496-011**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	49			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/25 1255) **Lab ID: K2107496-012**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	59			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A Foul Cond. Inlet (6/25 1345) **Lab ID: K2107496-013**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2600			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	13			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	33			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B Foul Cond. Outlet (6/25 1350) **Lab ID: K2107496-014**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	480			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	2.2			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	6.1			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 3A Paper Machine WW (6/25 1403) **Lab ID: K2107496-015**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	67			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/25 1630) **Lab ID: K2107496-016**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	77			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/25 1740) **Lab ID: K2107496-017**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	78			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/25 1845) **Lab ID: K2107496-018**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	92			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/26 1010) **Lab ID: K2107496-019**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	97			0.50	ug/mL	NCASI MeOH-94.03

SAMPLE DETECTION SUMMARY

CLIENT ID: 3A Paper Machine WW (6/26 1125) **Lab ID: K2107496-020**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	100			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/26 1230) **Lab ID: K2107496-021**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	100			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3B Pulp Dryer WW (6/26 1305) **Lab ID: K2107496-022**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	70			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/26 1400) **Lab ID: K2107496-023**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	110			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3B Pulp Dryer WW (6/26 1415) **Lab ID: K2107496-024**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	74			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/26 1445) **Lab ID: K2107496-025**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	110			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3B Pulp Dryer WW (6/26 1530) **Lab ID: K2107496-026**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	75			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 3A Paper Machine WW (6/26 1550) **Lab ID: K2107496-027**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	100			0.50	ug/mL	NCASI MeOH-94.03

Sample Receipt Information

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
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SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2107496-001	3A Paper Machine WW (6/24 1115)	6/24/2021	1115
K2107496-002	2A Foul Cond. Inlet (6/24 1510)	6/24/2021	1510
K2107496-003	2B Foul Cond. Inlet (6/24 1515)	6/24/2021	1515
K2107496-004	3A Paper Machine WW (6/25 0817)	6/25/2021	0817
K2107496-005	3A Paper Machine WW (6/25 0924)	6/25/2021	0924
K2107496-006	3A Paper Machine WW (6/25 1030)	6/25/2021	1030
K2107496-007	2A Foul Cond. Inlet (6/25 1035)	6/25/2021	1035
K2107496-008	2B Foul Cond. Outlet (6/25 1040)	6/25/2021	1040
K2107496-009	2A Foul Cond. Inlet (6/25 1205)	6/25/2021	1205
K2107496-010	2B Foul Cond. Outlet (6/25 1210)	6/25/2021	1210
K2107496-011	3A Paper Machine WW (6/25 1200)	6/25/2021	1200
K2107496-012	3A Paper Machine WW (6/25 1255)	6/25/2021	1255
K2107496-013	2A Foul Cond. Inlet (6/25 1345)	6/25/2021	1345
K2107496-014	2B Foul Cond. Outlet (6/25 1350)	6/25/2021	1350
K2107496-015	3A Paper Machine WW (6/25 1403)	6/25/2021	1403
K2107496-016	3A Paper Machine WW (6/25 1630)	6/25/2021	1630
K2107496-017	3A Paper Machine WW (6/25 1740)	6/25/2021	1740
K2107496-018	3A Paper Machine WW (6/25 1845)	6/25/2021	1845
K2107496-019	3A Paper Machine WW (6/26 1010)	6/26/2021	1010
K2107496-020	3A Paper Machine WW (6/26 1125)	6/26/2021	1125
K2107496-021	3A Paper Machine WW (6/26 1230)	6/26/2021	1230
K2107496-022	3B Pulp Dryer WW (6/26 1305)	6/26/2021	1305
K2107496-023	3A Paper Machine WW (6/26 1400)	6/26/2021	1400
K2107496-024	3B Pulp Dryer WW (6/26 1415)	6/26/2021	1415
K2107496-025	3A Paper Machine WW (6/26 1445)	6/26/2021	1445
K2107496-026	3B Pulp Dryer WW (6/26 1530)	6/26/2021	1530
K2107496-027	3A Paper Machine WW (6/26 1550)	6/26/2021	1550

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SR# K2107496

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COC# ___

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Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company: New Indy Containr Board
Address:
Phone #: (803) 981-8010
email: dan.mallett@new-indycb.com
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 3A PaperMachine WW		6-24-21	1115	WW	1	x	x						Duplicate for QA
2. 2A Foul Cond. Inlet		6-24-21	1510	WW	1	x	x						Duplicate for QA
3. 2B Foul Cond Inlet		6-24-21	1515	WW	1	x	x						Duplicate for QA
4.													
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- ___ V. EDD

Invoice Information

P.O.# ___
Bill To: ___

Turnaround Requirements

___ 24 hr. ___ 48 hr.
✓ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other ___ (Circle One)

* sample date & time crucial for identification

pg 3 of 9

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature		Ref secure area	Dale Robinson	Ref Secure Area		
Printed Name	Katie Van Valkinburgh	Ref Secure Area	Dale Robinson	Ref Secure Area		Naomi Pedersen
Firm	TRC	New Indy	New Indy	New Indy		ALS
Date/Time	6-24-21 1120	6-24-21 1120	6-24-21 1515	6-24-21 1515		6/29/21 1030

6-24-21 1520 6-24-21 1520

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SR# K2107496
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COC#________

Page 1 of 1

Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company: New Indy Container Board
Address: 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone #: (803) 981-8010
email: Dan.mallett@new-indycb.com
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 3A - Paper Machine WW		6-25-21	0817	WW	1	x	x						
2. 3A - Paper Machine WW		6-25-21	0924	WW	1	x	x						
3. 3A - Paper Machine WW		6-25-21	1030	WW	1	x	x						
4. 2A - Foul Cond Inlet		6-25-21	1035	WW	1	x	x						
5. 2B - Foul Cond. Outlet		6-25-21	1040	WW	1	x	x						
6. 2A - Foul Cond. Inlet		6-25-21	1205	WW	1	x	x						
7. 2B - Foul Cond. Outlet		6-25-21	1210	WW	1	x	x						
8. 3A - Paper Machine WW		6-25-21	1200	WW	1	x	x						
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

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✓ 24 hr. ____ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

Pg 5 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Ref Secure Area Signature	Dale Robinson Signature	Ref Secure Area Signature	Signature	Signature
Katie VanValkinburgh Printed Name	Ref Secure Area Printed Name	Dale Ropinson Printed Name	Ref Secure Area Printed Name	Printed Name	Naomi Pedersen Printed Name
TRC Firm	New Indy Firm	New Indy Firm	New Indy Firm	Firm	ALS Firm
6-25-21 0820 Date/Time	6-25-21 0820 Date/Time	6-25-21 1040 Date/Time	6-25-21 1040 Date/Time	Date/Time	6/29/21 1030 Date/Time

6-25-21 0930 6-25-21 0930 6-25-21 1045 6-25-21 1045
6-25-21 1035 6-25-21 1035 6-25-21 1215 6-25-21 1215
6-25-21 1205 1205

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Project Name DHEC Order

Project Number:

Project Manager Dan Mallett

Company New Indy Containerboard

Address 5300 Cureton Ferry Rd / Catawba, SC 29704

Phone # (803) 981-8010

email Dan.mallett@new-indycb.com

Sampler Signature

Sampler Printed Name

	CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1.	3A-Paper Machine WW		6-25-21	1255	WW	1	x	x						
2.	2A - Foul Cond. Inlet		6-25-21	1345	WW	1	x	x						
3.	2B-Foul Cond. Outlet		6-25-21	1350	WW	1	x	x						
4.	3A - Paper Machine WW		6-25-21	1403	WW	1	x	x						
5.	3A-Paper Machine WW		6-25-21	1630	WW	1	x	x						
6.	3A-Paper Machine WW		6-25-21	1740	WW	1	x	x						
7.	3A-Paper Machine WW		6-25-21	1845	WW	1	x	x						
8.														
9.														
10.														

Report Requirements

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Turnaround Requirements

___ 24 hr. ___ 48 hr.

X 5 Day

___ Standard

Requested Report Date

Circle which metals are to be analyzed

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Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

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Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
	Ref Secure Area	Dale Robinson	Ref Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
Katie VanValkinburgh	Ref Secure Area	Dale Robinson	Ref Secure Area		Naomi Pedersen
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
TRC	New Indy	New Indy	New Indy		ALS
Firm	Firm	Firm	Firm	Firm	Firm
6-25-21 1300	6-25-21 1300	6-25-21 1355	6-25-21 1355		6/29/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
6-25-21 1405 6-25-21 1605 6-25-21 1745	6-25-21 1405 6-25-21 1605 6-25-21 1745				

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Page 1 of 1

Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company: New Indy Container Board
Address: 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone #: (803) 981-8010
email: Dan.mallett@new-indycb.com
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 3A-Paper Machine WW		6-26-21	1010	WW	1	x	x						
2. 3A-Paper Machine WW		6-26-21	1125	WW	1	x	x						
3. 3A-Paper Machine WW		6-26-21	1230	WW	1	x	x						
4. 3B Pulp Dryer WW		6-26-21	1305	WW	1	x	x						
5. 3A-Paper Machine WW		6-26-21	1400	WW	1	x	x						
6. 3B-Pulp Dryer WW		6-26-21	1415	WW	1	x	x						
7. 3A-Paper Machine WW		6-26-21	1445	WW	1	x	x						
8. 3B-Pulp Dryer WW		6-26-21	1530	WW	1	x	x						
9. 3A-Paper Machine WW		6-26-21	1550	WW	1	x	x						
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

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Turnaround Requirements

___ 24 hr. ___ 48 hr.
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___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

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Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Dale Robinson	Ref Secure Area	Garness Harris	Ref Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
Dale Robinson	Ref. Secure Area	Garness Harris	Ref Secure Area		Naomi Pedersen
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy		ALS
Firm	Firm	Firm	Firm	Firm	Firm
6-26-21 1015	6-26-21 1015	6-26-21 1450	6-26-21 1450		6/29/21 1030
Date/Time	Date/Time	Date/Time 6-26-21 1530	Date/Time 6-26-21 1530	Date/Time	Date/Time
6-26-21 1130 6-26-21 1235 6-26-21 1310 6-26-21 1405	6-26-21 1130 6-26-21 1235 6-26-21 1310 6-26-21 1405 1420	6-26-21 1555	6-26-21 1555		

PM SW

Cooler Receipt and Preservation Form

Client New Indy Service Request K21 07496

Received: 6/29/21 Opened: 6/29/21 By: NP Unloaded: 6/29/21 By: NP

1. Samples were received via? *USPS* *Fed Ex* [✓ *UPS*] *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) [✓ *Cooler*] *Box* *Envelope* *Other* ______ *NA*
3. Were custody seals on coolers? NA Y [✓ N] If yes, how many and where? ______

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA [✓ Y] N If yes, notate the temperature in the appropriate column below:

   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N

   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
1.4	—	IR02	116722			1Z 221 430 01 9345 1019	

6. Packing material: *Inserts* *Baggies* [✓ *Bubble Wrap*] *Gel Packs* [✓ *Wet Ice*] *Dry Ice* *Sleeves* ______
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* [✓ NA] Y N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

RUSH

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: ______

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory’s NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
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Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107496

Sample Name: 3A Paper Machine WW (6/24 1115)
Lab Code: K2107496-001
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2A Foul Cond. Inlet (6/24 1510)
Lab Code: K2107496-002
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2B Foul Cond. Inlet (6/24 1515)
Lab Code: K2107496-003
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/25 0817)
Lab Code: K2107496-004
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

ALS Group USA, Corp.
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Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107496

Sample Name: 3A Paper Machine WW (6/25 0924)
Lab Code: K2107496-005
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/25 1030)
Lab Code: K2107496-006
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2A Foul Cond. Inlet (6/25 1035)
Lab Code: K2107496-007
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2B Foul Cond. Outlet (6/25 1040)
Lab Code: K2107496-008
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

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Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107496

Sample Name: 2A Foul Cond. Inlet (6/25 1205)
Lab Code: K2107496-009
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2B Foul Cond. Outlet (6/25 1210)
Lab Code: K2107496-010
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/25 1200)
Lab Code: K2107496-011
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/25 1255)
Lab Code: K2107496-012
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Client: New-Indy Containerboard **Service Request:** K2107496
Project: DHEC Order/

Sample Name: 2A Foul Cond. Inlet (6/25 1345) **Date Collected:** 06/25/21
Lab Code: K2107496-013 **Date Received:** 06/29/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2B Foul Cond. Outlet (6/25 1350) **Date Collected:** 06/25/21
Lab Code: K2107496-014 **Date Received:** 06/29/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/25 1403) **Date Collected:** 06/25/21
Lab Code: K2107496-015 **Date Received:** 06/29/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/25 1630) **Date Collected:** 06/25/21
Lab Code: K2107496-016 **Date Received:** 06/29/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

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Analyst Summary report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order/		

Sample Name:	3A Paper Machine WW (6/25 1740)	**Date Collected:**	06/25/21
Lab Code:	K2107496-017	**Date Received:**	06/29/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	3A Paper Machine WW (6/25 1845)	**Date Collected:**	06/25/21
Lab Code:	K2107496-018	**Date Received:**	06/29/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	3A Paper Machine WW (6/26 1010)	**Date Collected:**	06/26/21
Lab Code:	K2107496-019	**Date Received:**	06/29/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	3A Paper Machine WW (6/26 1125)	**Date Collected:**	06/26/21
Lab Code:	K2107496-020	**Date Received:**	06/29/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Client: New-Indy Containerboard
Service Request: K2107496
Project: DHEC Order/

Sample Name: 3A Paper Machine WW (6/26 1230)
Date Collected: 06/26/21
Lab Code: K2107496-021
Date Received: 06/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3B Pulp Dryer WW (6/26 1305)
Date Collected: 06/26/21
Lab Code: K2107496-022
Date Received: 06/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/26 1400)
Date Collected: 06/26/21
Lab Code: K2107496-023
Date Received: 06/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3B Pulp Dryer WW (6/26 1415)
Date Collected: 06/26/21
Lab Code: K2107496-024
Date Received: 06/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Analyst Summary report

Client: New-Indy Containerboard

Project: DHEC Order/

Service Request: K2107496

Sample Name: 3A Paper Machine WW (6/26 1445)
Lab Code: K2107496-025
Sample Matrix: Water

Date Collected: 06/26/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3B Pulp Dryer WW (6/26 1530)
Lab Code: K2107496-026
Sample Matrix: Water

Date Collected: 06/26/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 3A Paper Machine WW (6/26 1550)
Lab Code: K2107496-027
Sample Matrix: Water

Date Collected: 06/26/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Results

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RIGHT SOLUTIONS | RIGHT PARTNER

Semivolatile Organic Compounds by GC

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Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/24/21 11:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1115)	**Units:**	ug/mL
Lab Code:	K2107496-001	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 04:00	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 04:00	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 04:00	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/24/21 15:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/24 1510)	**Units:**	ug/mL
Lab Code:	K2107496-002	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**		1.0	1	07/01/21 22:48	6/30/21	
Acetaldehyde	**25**		1.0	1	07/01/21 22:48	6/30/21	
Propionaldehyde	ND	U	1.0	1	07/01/21 22:48	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/24/21 15:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Inlet (6/24 1515)	**Units:**	ug/mL
Lab Code:	K2107496-003	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.9**	1.0	1	07/01/21 23:09	6/30/21	
Acetaldehyde	**4.1**	1.0	1	07/01/21 23:09	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 23:09	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 08:17
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 0817)	**Units:**	ug/mL
Lab Code:	K2107496-004	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 05:01	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 05:01	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 05:01	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 09:24
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 0924)	**Units:**	ug/mL
Lab Code:	K2107496-005	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 05:21	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 05:21	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 05:21	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 10:30
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1030)	**Units:**	ug/mL
Lab Code:	K2107496-006	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 05:42	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 05:42	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 05:42	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 10:35
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/25 1035)	**Units:**	ug/mL
Lab Code:	K2107496-007	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**		1.0	1	07/01/21 23:29	6/30/21	
Acetaldehyde	**26**		1.0	1	07/01/21 23:29	6/30/21	
Propionaldehyde	ND	U	1.0	1	07/01/21 23:29	6/30/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107496
Date Collected: 06/25/21 10:40
Date Received: 06/29/21 10:30

Sample Name: 2B Foul Cond. Outlet (6/25 1040)
Lab Code: K2107496-008

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**2.1**	1.0	1	07/01/21 06:22	6/30/21	
Acetaldehyde	**4.9**	1.0	1	07/01/21 06:22	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 06:22	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 12:05
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/25 1205)	**Units:**	ug/mL
Lab Code:	K2107496-009	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**11**	1.0	1	07/01/21 23:50	6/30/21	
Acetaldehyde	**24**	1.0	1	07/01/21 23:50	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 23:50	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 12:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/25 1210)	**Units:**	ug/mL
Lab Code:	K2107496-010	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**2.0**	1.0	1	07/01/21 09:42	6/30/21	
Acetaldehyde	**4.4**	1.0	1	07/01/21 09:42	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 09:42	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 12:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1200)	**Units:**	ug/mL
Lab Code:	K2107496-011	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 10:01	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 10:01	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 10:01	6/30/21	

Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2107496
Project:	DHEC Order		**Date Collected:**	06/25/21 12:55
Sample Matrix:	Water		**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1255)		**Units:**	ug/mL
Lab Code:	K2107496-012		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/02/21 11:41	6/30/21	
Acetaldehyde	ND U	1.0	1	07/02/21 11:41	6/30/21	
Propionaldehyde	ND U	1.0	1	07/02/21 11:41	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 13:45
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/25 1345)	**Units:**	ug/mL
Lab Code:	K2107496-013	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**13**	1.0	1	07/02/21 12:39	6/30/21	
Acetaldehyde	**33**	1.0	1	07/02/21 12:39	6/30/21	
Propionaldehyde	ND U	1.0	1	07/02/21 12:39	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 13:50
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/25 1350)	**Units:**	ug/mL
Lab Code:	K2107496-014	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**2.2**	1.0	1	07/01/21 10:59	6/30/21	
Acetaldehyde	**6.1**	1.0	1	07/01/21 10:59	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 10:59	6/30/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107496
Date Collected: 06/25/21 14:03
Date Received: 06/29/21 10:30

Sample Name: 3A Paper Machine WW (6/25 1403)
Lab Code: K2107496-015

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/02/21 12:00	6/30/21	
Acetaldehyde	ND U	1.0	1	07/02/21 12:00	6/30/21	
Propionaldehyde	ND U	1.0	1	07/02/21 12:00	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 16:30
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1630)	**Units:**	ug/mL
Lab Code:	K2107496-016	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 11:38	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 11:38	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 11:38	6/30/21	

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Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 17:40
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1740)	**Units:**	ug/mL
Lab Code:	K2107496-017	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 11:58	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 11:58	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 11:58	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 18:45
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1845)	**Units:**	ug/mL
Lab Code:	K2107496-018	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 12:17	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 12:17	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 12:17	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 10:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1010)	**Units:**	ug/mL
Lab Code:	K2107496-019	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/02/21 12:20	6/30/21	
Acetaldehyde	ND U	1.0	1	07/02/21 12:20	6/30/21	
Propionaldehyde	ND U	1.0	1	07/02/21 12:20	6/30/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107496
Date Collected: 06/26/21 11:25
Date Received: 06/29/21 10:30

Sample Name: 3A Paper Machine WW (6/26 1125)
Lab Code: K2107496-020

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 12:56	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 12:56	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 12:56	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 12:30
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1230)	**Units:**	ug/mL
Lab Code:	K2107496-021	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	07/01/21 13:15	6/30/21	
Acetaldehyde	ND	U	1.0	1	07/01/21 13:15	6/30/21	
Propionaldehyde	ND	U	1.0	1	07/01/21 13:15	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 13:05
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3B Pulp Dryer WW (6/26 1305)	**Units:**	ug/mL
Lab Code:	K2107496-022	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 13:35	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 13:35	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 13:35	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 14:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1400)	**Units:**	ug/mL
Lab Code:	K2107496-023	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 13:54	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 13:54	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 13:54	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 14:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3B Pulp Dryer WW (6/26 1415)	**Units:**	ug/mL
Lab Code:	K2107496-024	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 18:30	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 18:30	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 18:30	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 14:45
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1445)	**Units:**	ug/mL
Lab Code:	K2107496-025	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	07/01/21 18:50	6/30/21	
Acetaldehyde	ND	U	1.0	1	07/01/21 18:50	6/30/21	
Propionaldehyde	ND	U	1.0	1	07/01/21 18:50	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 15:30
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3B Pulp Dryer WW (6/26 1530)	**Units:**	ug/mL
Lab Code:	K2107496-026	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 19:10	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 19:10	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 19:10	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 15:50
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1550)	**Units:**	ug/mL
Lab Code:	K2107496-027	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 19:30	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 19:30	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 19:30	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/24/21 11:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/24 1115)	**Units:**	ug/mL
Lab Code:	K2107496-001	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**16**	0.50	1	07/01/21 04:00	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/24/21 15:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/24 1510)	**Units:**	ug/mL
Lab Code:	K2107496-002	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2400**	5.0	10	07/01/21 04:20	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/24/21 15:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Inlet (6/24 1515)	**Units:**	ug/mL
Lab Code:	K2107496-003	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**430**	0.50	1	07/01/21 23:09	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 08:17
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 0817)	**Units:**	ug/mL
Lab Code:	K2107496-004	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**27**	0.50	1	07/01/21 05:01	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 09:24
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 0924)	**Units:**	ug/mL
Lab Code:	K2107496-005	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**38**	0.50	1	07/01/21 05:21	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 10:30
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1030)	**Units:**	ug/mL
Lab Code:	K2107496-006	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**43**	0.50	1	07/01/21 05:42	6/30/21	

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Superset Reference:21-0000595361 rev 00

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 10:35
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/25 1035)	**Units:**	ug/mL
Lab Code:	K2107496-007	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2600**	5.0	10	07/01/21 06:02	6/30/21	

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Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 10:40
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/25 1040)	**Units:**	ug/mL
Lab Code:	K2107496-008	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**490**	0.50	1	07/01/21 06:22	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 12:05
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/25 1205)	**Units:**	ug/mL
Lab Code:	K2107496-009	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2600**	5.0	10	07/01/21 08:43	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 12:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/25 1210)	**Units:**	ug/mL
Lab Code:	K2107496-010	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**460**	0.50	1	07/01/21 09:42	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 12:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1200)	**Units:**	ug/mL
Lab Code:	K2107496-011	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**49**	0.50	1	07/01/21 10:01	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 12:55
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1255)	**Units:**	ug/mL
Lab Code:	K2107496-012	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**59**	0.50	1	07/02/21 11:41	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 13:45
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet (6/25 1345)	**Units:**	ug/mL
Lab Code:	K2107496-013	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2600**	5.0	10	07/01/21 10:40	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 13:50
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2B Foul Cond. Outlet (6/25 1350)	**Units:**	ug/mL
Lab Code:	K2107496-014	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**480**	0.50	1	07/01/21 10:59	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 14:03
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1403)	**Units:**	ug/mL
Lab Code:	K2107496-015	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**67**	0.50	1	07/02/21 12:00	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 16:30
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1630)	**Units:**	ug/mL
Lab Code:	K2107496-016	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**77**	0.50	1	07/01/21 11:38	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 17:40
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1740)	**Units:**	ug/mL
Lab Code:	K2107496-017	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**78**	0.50	1	07/01/21 11:58	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/25/21 18:45
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/25 1845)	**Units:**	ug/mL
Lab Code:	K2107496-018	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**92**	0.50	1	07/01/21 12:17	6/30/21	

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Superset Reference:21-0000595361 rev 00

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 10:10
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1010)	**Units:**	ug/mL
Lab Code:	K2107496-019	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**97**	0.50	1	07/02/21 12:20	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 11:25
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1125)	**Units:**	ug/mL
Lab Code:	K2107496-020	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**100**	0.50	1	07/01/21 12:56	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 12:30
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30

Sample Name:	3A Paper Machine WW (6/26 1230)	**Units:**	ug/mL
Lab Code:	K2107496-021	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**100**	0.50	1	07/01/21 13:15	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 13:05
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3B Pulp Dryer WW (6/26 1305)	**Units:**	ug/mL
Lab Code:	K2107496-022	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**70**	0.50	1	07/01/21 13:35	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 14:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1400)	**Units:**	ug/mL
Lab Code:	K2107496-023	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**110**	0.50	1	07/01/21 13:54	6/30/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 14:15
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3B Pulp Dryer WW (6/26 1415)	**Units:**	ug/mL
Lab Code:	K2107496-024	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**74**	0.50	1	07/01/21 18:30	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 14:45
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1445)	**Units:**	ug/mL
Lab Code:	K2107496-025	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**110**	0.50	1	07/01/21 18:50	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 15:30
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3B Pulp Dryer WW (6/26 1530)	**Units:**	ug/mL
Lab Code:	K2107496-026	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**75**	0.50	1	07/01/21 19:10	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	06/26/21 15:50
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	3A Paper Machine WW (6/26 1550)	**Units:**	ug/mL
Lab Code:	K2107496-027	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**100**	0.50	1	07/01/21 19:30	6/30/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Semivolatile Organic Compounds by GC

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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112049-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/30/21 18:15	6/30/21	
Acetaldehyde	ND U	1.0	1	06/30/21 18:15	6/30/21	
Propionaldehyde	ND U	1.0	1	06/30/21 18:15	6/30/21	

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dba ALS Environmental

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112050-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	06/30/21 18:54	6/30/21	
Acetaldehyde	ND U	1.0	1	06/30/21 18:54	6/30/21	
Propionaldehyde	ND U	1.0	1	06/30/21 18:54	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112046-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	06/30/21 16:18	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107496
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112047-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	06/30/21 16:57	6/30/21	

July 02, 2021 Service Request No:K2107515

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: DHEC Order

Dear Daniel,

Enclosed are the results of the sample(s) submitted to our laboratory June 29, 2021
For your reference, these analyses have been assigned our service request number **K2107515.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A Wolf

Sydney A. Wolf
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Received:**	06/29/2021
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Sixteen water samples were received for analysis at ALS Environmental on 06/29/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method NCASI MeOH-94.03, 06/30/2021:Samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Method NCASI MeOH-94.03, 06/30/2021:The control criteria for matrix spike recovery of methanol for sample 2A Foul Cond. Inlet 6/24 Composite were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by Sydney A Wolfe

Date 07/02/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 2A Foul Cond. Inlet 6/24 Composite **Lab ID: K2107515-004**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2400			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	27			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2A Foul Cond. Inlet 6/25 Composite **Lab ID: K2107515-008**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2600			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	11			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	26			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2A Foul Cond. Inlet 6/26 Composite **Lab ID: K2107515-012**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2400			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	11			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	27			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2A Foul Cond. Inlet 6/27 Composite **Lab ID: K2107515-016**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2500			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	11			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	33			1.0	ug/mL	NCASI HAPS-99.01

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2107515-004	2A Foul Cond. Inlet 6/24 Composite	6/24/2021	0800
K2107515-008	2A Foul Cond. Inlet 6/25 Composite	6/25/2021	0805
K2107515-012	2A Foul Cond. Inlet 6/26 Composite	6/26/2021	0800
K2107515-016	2A Foul Cond. Inlet 6/27 Composite	6/27/2021	0800

K2107515

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SR# ~~K2107495~~ [illegible] 6/30

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COC#________

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name
Project Number DHEC Order
Project Manager Dan Mallett
Company
Address
Phone # (803) 981-8010
email Dan.mallett@new-indycb.com
Sampler Signature
Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A Foul Cond. Inlet		6/24/21	0800	WW	1	x	x						Composite before analysis
2. 2A Foul Cond. Inlet		6/24/21	1200	WW	1	x	x						
3. 2A Foul Cond Inlet		6/24/21	1600	WW	1	x	x						
4. 3A Paper Machine WW		6/24/21	1000	WW	1	x	x						
5. 3A Paper Machine WW		6/24/21	1115	WW	1	x	x						
6. 3A Paper Machine WW		6/24/21	1210	WW	1	x	x						
7. 3A Paper Machine WW		6/24/21	1331	WW	1	x	x						
8. 3A Paper Machine WW		6/24/21	1450	WW	1	x	✓						
9.													
10.													

Prioritize 48-hr * on these

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#________
Bill To:________

Turnaround Requirements

___ 24 hr.
___ 5 Day
___ Standard
✓ 48 hr.

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time are crucial for sample identification *

pg 1 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Dale Robinson	Ref Secure Area	Katie VanValkinburgh	Ref Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
Dale Robinson	Ref Secure Area	Katie VanValkinburgh	Ref Secure Area		Naomi Pedersen
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	TRC	New Indy		ALS
Firm	Firm	Firm	Firm	Firm	Firm
6-24-21 / 605	6-24-21 / 805	6-24-21 / 1010	6-24-21 / 1010		6/29/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
6-24-21 / 1205	6-24-21 / 1205	6-24-21 / 1120	6-24-21 / 1120		
6-24-21 / 1605	6-24-21 / 1605	6-24-21 / 12.15	6-24-21 / 1215		
		6-24-21 / 1340	6-24-21 / 1340		

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K2107515

SR# ~~K2107495~~ CA 6/30

COC Set_____of_____

COC#________________

Page 1 of 1

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www.alsglobal.com

Project Name DHEC Order
Project Number
Project Manager Dan Mallett
Company
Address
Phone # (803) 981-8010
email dan.mallett@new-indycb.com
Sampler Signature
Sampler Printed Name

	CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1.	2A Foul Cond. Inlet		6-25-21	0805	WW	1	x	x						Composite before analysis
2.	2A Foul Cond. Inlet		6-25-21	1205	WW	1	x	x						
3.	2A Foul Cond Inlet		6-25-21	1600	WW	1	x	x						
4.														
5.														
6.														
7.														
8.														
9.														
10.														

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#______________
Bill To:______________

Turnaround Requirements

___ 24 hr.
✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Special Instructions/Comments:

* Sample Date and Time crucial for sample identification *
* Prioritize composite sample for 48-hr turn-around

pg 4 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Dale Robinson	Ref Secure Area				
Signature Dale Robinson	Signature Ref Secure Area	Signature	Signature	Signature	Signature Naomi Pedersen
Printed Name New Indy	Printed Name New Indy	Printed Name	Printed Name	Printed Name	Printed Name ALS
Firm 6-25-21 0810	Firm 6-25-21 0810	Firm	Firm	Firm	Firm 6/29/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

6-25-21 1210 6-25-21 1210
6-25-21 1605 6-25-21 1605

ALS

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CHAIN OF CUSTODY

116722

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001

K2107515

SR# ~~K2107495~~ 6/30

COC Set____of____

COC#________

Page 1 of 1

Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company: New Indy Containe Board
Address: 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone #: (803) 981-8010
email: Dan.mallett@new-indycb.com
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A-Foul Cond Inlet		6-26-21	0800	WW	1	x	x						Composite before analysis
2. 2A-Foul Cond Inlet		6-26-21	1200	WW	1	x	x						
3. 2A-Foul Cond Inlet		6-26-21	1600	WW	1	x	x						
4.													
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#____
Bill To:____

Turnaround Requirements

___ 24 hr.
✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

pg 7 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Dale Robinson	Ref secure area	Garness Harris	Ref Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
Dale Robinson	Ref Secure Area	Garness Harris	Ref Secure Area		Naomi Pedersen
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy		ALS
Firm	Firm	Firm	Firm	Firm	Firm
6-26-21 0805	6-26-21 0805	6-26-21 1605	6-26-21 1605		6/29/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
6-26-21 1205	626-21 1205				

ALS

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116722

001

K2107515

SR# ~~K2107495~~ 6/30

COC Set_____of_____

COC#__________

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Page 1 of 1

Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company: New Indy Container Board
Address: 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone #: (803) 981-8010
email: Dan.mallett@new-indycb.com
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A - Foul Cond. Inlet		6-27-21	0800	WW	1	x	x						Composite
2. 2A - Foul Cond Inlet		6-27-21	1200	WW	1	x	x						before
3. 2A - Foul Cond Inlet		6-27-21	1600	WW	1	x	x						analysis
4.													
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

___ 24 hr. [✓ 48 hr.]
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____ (Circle One)

* Sample Date and Time crucial for sample identification *

pg 9 of 9

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Sarren Harris Signature	ReF Secure Area Signature	Signature	Signature	Signature	Signature
Garness Harris Printed Name	ReF. Secure Area Printed Name	Printed Name	Printed Name	Printed Name	Naomi Pedersu Printed Name
New Indy Firm	New Indy Firm	Firm	Firm	Firm	ALS Firm
6-27-21 805 Date/Time	6-27-21 805 Date/Time	Date/Time	Date/Time	Date/Time	6/29/21 1030 Date/Time
1205 1605	1205 1605				

K2107515 PM SW

Cooler Receipt and Preservation Form

Client New Indy Service Request ~~K21~~ 07495 6/30

Received: 6/29/21 Opened: 6/29/21 By: AP Unloaded: 6/29/21 By: AP

1. Samples were received via? USPS Fed Ex [✓ UPS] DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) [✓ Cooler] Box Envelope Other ______ NA
3. Were custody seals on coolers? NA Y [✓ N] If yes, how many and where? ______
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA [✓ Y] N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
1.4	—	1802	116722			1Z 221 430 01 9345 1019	

6. Packing material: *Inserts* *Baggies* [✓ *Bubble Wrap*] *Gel Packs* [✓ *Wet Ice*] *Dry Ice* *Sleeves* ______
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* [✓ NA] Y N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

RUSH

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: ______

Miscellaneous Forms

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory’s NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107515

Sample Name: 2A Foul Cond. Inlet 6/24 Composite
Lab Code: K2107515-004
Sample Matrix: Water
Date Collected: 06/24/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2A Foul Cond. Inlet 6/25 Composite
Lab Code: K2107515-008
Sample Matrix: Water
Date Collected: 06/25/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2A Foul Cond. Inlet 6/26 Composite
Lab Code: K2107515-012
Sample Matrix: Water
Date Collected: 06/26/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2A Foul Cond. Inlet 6/27 Composite
Lab Code: K2107515-016
Sample Matrix: Water
Date Collected: 06/27/21
Date Received: 06/29/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Results

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Semivolatile Organic Compounds by GC

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www.alsglobal.com

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107515
Date Collected: 06/24/21 08:00
Date Received: 06/29/21 10:30

Sample Name: 2A Foul Cond. Inlet 6/24 Composite
Lab Code: K2107515-004

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**		1.0	1	07/01/21 19:50	6/30/21	
Acetaldehyde	**27**		1.0	1	07/01/21 19:50	6/30/21	
Propionaldehyde	ND	U	1.0	1	07/01/21 19:50	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	06/25/21 08:05
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet 6/25 Composite	**Units:**	ug/mL
Lab Code:	K2107515-008	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**11**	1.0	1	07/01/21 20:49	6/30/21	
Acetaldehyde	**26**	1.0	1	07/01/21 20:49	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 20:49	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	06/26/21 08:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet 6/26 Composite	**Units:**	ug/mL
Lab Code:	K2107515-012	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**11**		1.0	1	07/01/21 21:09	6/30/21	
Acetaldehyde	**27**		1.0	1	07/01/21 21:09	6/30/21	
Propionaldehyde	ND	U	1.0	1	07/01/21 21:09	6/30/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	06/27/21 08:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet 6/27 Composite	**Units:**	ug/mL
Lab Code:	K2107515-016	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**11**	1.0	1	07/01/21 21:29	6/30/21	
Acetaldehyde	**33**	1.0	1	07/01/21 21:29	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 21:29	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	06/24/21 08:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet 6/24 Composite	**Units:**	ug/mL
Lab Code:	K2107515-004	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2400**	5.0	10	06/30/21 20:30	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	06/25/21 08:05
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet 6/25 Composite	**Units:**	ug/mL
Lab Code:	K2107515-008	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2600**	5.0	10	06/30/21 21:28	6/30/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	06/26/21 08:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet 6/26 Composite	**Units:**	ug/mL
Lab Code:	K2107515-012	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2400**	5.0	10	07/01/21 16:12	6/30/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	06/27/21 08:00
Sample Matrix:	Water	**Date Received:**	06/29/21 10:30
Sample Name:	2A Foul Cond. Inlet 6/27 Composite	**Units:**	ug/mL
Lab Code:	K2107515-016	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2500**	5.0	10	06/30/21 22:06	6/30/21	

Printed 7/2/2021 4:57:28 PM

Superset Reference:21-0000595349 rev 00

QC Summary Forms

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Semivolatile Organic Compounds by GC

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112051-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/01/21 15:12	6/30/21	
Acetaldehyde	ND U	1.0	1	07/01/21 15:12	6/30/21	
Propionaldehyde	ND U	1.0	1	07/01/21 15:12	6/30/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107515
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112048-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	06/30/21 17:36	6/30/21	

August 17, 2021 Revised Service Request No:K2107727.01

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: DHEC Order

Dear Daniel,

Enclosed is the revised report for the sample(s) submitted to our laboratory July 02, 2021
For your reference, these analyses have been assigned our service request number **K2107727.**

The original COC and CRF are now included in this report.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

We apologize for any inconvenience this may have created.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A Wolf

Sydney A. Wolf
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

REVISED
11:28 am, Aug 17, 2021

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107727
Date Received: 07/02/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Sixteen water samples were received for analysis at ALS Environmental on 07/02/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method NCASI MeOH-94.03, 07/07/2021: Samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.
Method NCASI MeOH-94.03, 07/07/2021: The matrix spike recovery of Methanol for sample 2A Foul Cond. Inlet 6/28 Composite was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a high bias in this matrix. No further corrective action was appropriate.

Method NCASI MeOH-94.03, 07/09/2021: Sample 2A Foul Cond. Inlet 6/29 Composite required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.
Method NCASI MeOH-94.03, 07/09/2021:The control criteria for matrix spike recovery of Methanol for sample 2A Foul Cond. Inlet 6/29 Composite were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by Sydney A Wolfe

Date 07/12/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 2-A Foul Cond. Inlet 6/28 Composite **Lab ID: K2107727-004**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2500			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	33			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 6/29 Composite **Lab ID: K2107727-008**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2400			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	11			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	27			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 6/30 Composite **Lab ID: K2107727-012**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2000			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	10			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	19			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 6/30 Composite D **Lab ID: K2107727-016**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2100			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	10			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	20			1.0	ug/mL	NCASI HAPS-99.01

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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REVISED
11:28 am, Aug 17, 2021

Client: New-Indy Containerboard **Service Request:** K2107727
Project: DHEC Order

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2107727-004	2-A Foul Cond. Inlet 6/28 Composite	6/28/2021	0800
K2107727-008	2-A Foul Cond. Inlet 6/29 Composite	6/29/2021	0800
K2107727-012	2-A Foul Cond. Inlet 6/30 Composite	6/30/2021	0800
K2107727-016	2-A Foul Cond. Inlet 6/30 Composite D	6/30/2021	0800

ALS

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CHAIN OF CUSTODY
116722

001

SR# K2107727
COC Set____of____
COC#____________

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Project Name DHEC Order
Project Number:
Project Manager Dan Mallett
Company New Indy Container Board
Address 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone # (803) 981-8010
email Dan.mallett@new-indycb.com
Sampler Signature
Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2-A Foul Cond. Inlet		6-28-21	0800	WW	1	X	X						Composite
2. 2-A Foul Cond. Inlet		6-28-21	1200	WW	1	X	X						before
3. 2-A Foul Cond. Inlet		6-28-21	1600	WW	1	X	X						Analysis
4. 2-A Foul Cond. Inlet		6-29-21	0800	WW	1	X	X						Composite
5. 2A Foul Cond. Inlet		6-29-21	1200	WW	1	X	X						before
6. 2A Foul Cond. Inlet		6-29-21	1600	WW	1	X	X						Analysis
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#____________
Bill To:____________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garness Harris	Ref. Secure Area	David E Hensley	Ref Secure Area	Garness Harris	Ref Secure Area
Signature	Signature	Signature	Signature	Signature	Signature
GARNESS HARRIS	REF. SECURE AREA	DAVID E HENSLEY	REF SECURE AREA	GARNESS HARRIS	REF SECURE AREA
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
NEW Indy	NEW Indy	New Indy	NEW Indy	NEW Indy	New Indy
Firm	Firm	Firm	Firm	Firm	Firm
6-28-21 0805	6-28-21 0805	6-29-21 0810	6-29-21 0810	6-29-21 1205	6-29-21 1205
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time 6-29-21 1605	Date/Time 6-29-21 1605
1205 1605	1205 1605		Cleared for Billy Jones [illegible] ALS 7/2/21 1030		

ALS

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SR# K2107727

COC Set____of____

COC#__________

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Page 1 of 1

roject Name DHEC Order

Project Number:

roject Manager Dan Mallett

ompany New Indy Conteiner Board

ddress 5300 Cureton Fery Rd /Catawba, SC 29704

hone # (803) 981-8010

email Dan.mallett@new-indycb.com

ampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2-A Foul Cond. Inlet		6-30-21	0800	WW	1	X	X						Composite
2. 2-A Foul Cond. Inlet		6-30-21	1400	WW	1	X	X						before
3. 2-A Foul Cond. Inlet		6-30-21	1800	WW	1	X	X						Analysis
4. 2-A Foul Cond. Inlet		6-30-21	0800	WW	1	X	X						composite
5. 2-A Foul Cond. Inlet		6-30-21	1400	WW	1	X	X						before
6. 2-A Foul Cond. Inlet		6-30-21	1800	WW	1	X	X						Analysis
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

____ 24 hr. ✓ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garness Harris	Ref Secure Area				
Signature GARNESS HARRIS	Signature Ref Secure Area	Signature	Signature Perry Jones	Signature	Signature
Printed Name NEW Indy	Printed Name NEW Indy	Printed Name	Printed Name Perry Jones	Printed Name	Printed Name
Firm 6-30-21 0805	Firm 6-30-21 0805	Firm	Firm ALS 7/2/21 1030	Firm	Firm
Date/Time 1405 1805	Date/Time 1405 1805	Date/Time	Date/Time	Date/Time	Date/Time

PM SW

Cooler Receipt and Preservation Form

Client New Indy Container Board Service Request K21 07727

Received: 7/2/21 Opened: 7/2/21 By: PJ Unloaded: 7/2/21 By: PJ

1. Samples were received via? USPS Fed Ex [✓ UPS] DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) [✓ Cooler] Box Envelope Other ______ [✓ NA]
3. Were custody seals on coolers? NA Y [✓ N] If yes, how many and where? ______
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA [✓ Y] N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / [✓ NA]	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
3.2		IR02				1Z2214300194921456	

6. Packing material: *Inserts* *Baggies* [✓ *Bubble Wrap*] *Gel Packs* [✓ *Wet Ice*] *Dry Ice* *Sleeves* ______
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA Y [✓ N]
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA [✓ Y] N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
Foul cond 6-29-1600			✓						

Notes, Discrepancies, Resolutions: ______

PM SW

Cooler Receipt and Preservation Form

Client New Indy Service Request K21 07727

Received: 7/8/21 Opened: 7/8/21 By: CG Unloaded: 7/8/21 By: CG

1. Samples were received via? *USPS* *Fed Ex* [✓ *UPS*] *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) [✓ *Cooler*] *Box* *Envelope* *Other* ____ *NA*
3. Were custody seals on coolers? NA [✓ Y] N If yes, how many and where? 1 Front
   If present, were custody seals intact? [✓ Y] N If present, were they signed and dated? [✓ Y] N
4. Was a Temperature Blank present in cooler? NA [✓ Y] N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / [✓ NA]	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
2.4	/	IR02		—	—	1Z2214300197896238	

6. Packing material: *Inserts* *Baggies* [✓ *Bubble Wrap*] *Gel Packs* [✓ *Wet Ice*] *Dry Ice* *Sleeves* ____
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA [✓ Y] N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: Received replacement vial for 2-A Foul Cond. Inlet 6/29 1600

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: New-Indy Containerboard **Service Request:** K2107727
Project: DHEC Order/

Sample Name: 2-A Foul Cond. Inlet 6/28 Composite **Date Collected:** 06/28/21
Lab Code: K2107727-004 **Date Received:** 07/2/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet 6/29 Composite **Date Collected:** 06/29/21
Lab Code: K2107727-008 **Date Received:** 07/2/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet 6/30 Composite **Date Collected:** 06/30/21
Lab Code: K2107727-012 **Date Received:** 07/2/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet 6/30 Composite D **Date Collected:** 06/30/21
Lab Code: K2107727-016 **Date Received:** 07/2/21
Sample Matrix: Water

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Results

ALS Environmental—Kelso Laboratory
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Semivolatile Organic Compounds by GC

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www.alsglobal.com

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	06/28/21 08:00
Sample Matrix:	Water	**Date Received:**	07/02/21 10:30
Sample Name:	2-A Foul Cond. Inlet 6/28 Composite	**Units:**	ug/mL
Lab Code:	K2107727-004	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**		1.0	1	07/07/21 23:47	7/7/21	
Acetaldehyde	**33**		1.0	1	07/07/21 23:47	7/7/21	
Propionaldehyde	ND	U	1.0	1	07/07/21 23:47	7/7/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	06/29/21 08:00
Sample Matrix:	Water	**Date Received:**	07/02/21 10:30
Sample Name:	2-A Foul Cond. Inlet 6/29 Composite	**Units:**	ug/mL
Lab Code:	K2107727-008	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**11**	1.0	1	07/09/21 22:07	7/9/21	
Acetaldehyde	**27**	1.0	1	07/09/21 22:07	7/9/21	
Propionaldehyde	ND U	1.0	1	07/09/21 22:07	7/9/21	

Client:	New-Indy Containerboard		**Service Request:**	K2107727
Project:	DHEC Order		**Date Collected:**	06/30/21 08:00
Sample Matrix:	Water		**Date Received:**	07/02/21 10:30
Sample Name:	2-A Foul Cond. Inlet 6/30 Composite		**Units:**	ug/mL
Lab Code:	K2107727-012		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**10**	1.0	1	07/08/21 00:47	7/7/21	
Acetaldehyde	**19**	1.0	1	07/08/21 00:47	7/7/21	
Propionaldehyde	ND U	1.0	1	07/08/21 00:47	7/7/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107727
Date Collected: 06/30/21 08:00
Date Received: 07/02/21 10:30

Sample Name: 2-A Foul Cond. Inlet 6/30 Composite D
Lab Code: K2107727-016

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**10**	1.0	1	07/08/21 01:07	7/7/21	
Acetaldehyde	**20**	1.0	1	07/08/21 01:07	7/7/21	
Propionaldehyde	ND U	1.0	1	07/08/21 01:07	7/7/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	06/28/21 08:00
Sample Matrix:	Water	**Date Received:**	07/02/21 10:30
Sample Name:	2-A Foul Cond. Inlet 6/28 Composite	**Units:**	ug/mL
Lab Code:	K2107727-004	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2500**	5.0	10	07/07/21 22:09	7/7/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	06/29/21 08:00
Sample Matrix:	Water	**Date Received:**	07/02/21 10:30
Sample Name:	2-A Foul Cond. Inlet 6/29 Composite	**Units:**	ug/mL
Lab Code:	K2107727-008	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2400**	5.0	10	07/09/21 19:03	7/9/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107727
Date Collected: 06/30/21 08:00
Date Received: 07/02/21 10:30

Sample Name: 2-A Foul Cond. Inlet 6/30 Composite
Lab Code: K2107727-012

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2000**	5.0	10	07/07/21 23:07	7/7/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	06/30/21 08:00
Sample Matrix:	Water	**Date Received:**	07/02/21 10:30
Sample Name:	2-A Foul Cond. Inlet 6/30 Composite D	**Units:**	ug/mL
Lab Code:	K2107727-016	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2100**	5.0	10	07/07/21 23:27	7/7/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112479-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/07/21 21:30	7/7/21	
Acetaldehyde	ND U	1.0	1	07/07/21 21:30	7/7/21	
Propionaldehyde	ND U	1.0	1	07/07/21 21:30	7/7/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112679-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 16:21	7/9/21	
Acetaldehyde	ND U	1.0	1	07/09/21 16:21	7/9/21	
Propionaldehyde	ND U	1.0	1	07/09/21 16:21	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112480-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/07/21 20:51	7/7/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107727
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112690-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/09/21 15:41	7/9/21	

July 09, 2021 Service Request No:K2107787

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: Project Columbia

Dear Daniel,

Enclosed are the results of the sample(s) submitted to our laboratory July 07, 2021
For your reference, these analyses have been assigned our service request number **K2107787.**

Analyses were performed according to our laboratory’s NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A Wolf

Sydney A. Wolf
Project Manager

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: New-Indy Containerboard

Project: Project Columbia

Sample Matrix: Water

Service Request: K2107787

Date Received: 07/07/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

<u>Sample Receipt:</u>

Sixteen water samples were received for analysis at ALS Environmental on 07/07/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

<u>Semivoa GC:</u>

Method NCASI MeOH-94.03, 07/09/2021: Several samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Approved by Sydney a Wolfe

Date 07/09/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 1-A 2.0 ASB Inf 6/30 **Lab ID: K2107787-001**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	120			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2-A Foul Cond Inlet 6/30 **Lab ID: K2107787-003**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2700			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	14			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	26			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond Outlet 6/30 **Lab ID: K2107787-004**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	3400			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	14			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	25			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1-A 2.0 ASB Inf 7/1 **Lab ID: K2107787-005**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	85			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2-A Foul Cond Inlet 7/1 **Lab ID: K2107787-007**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1700			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	11			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	22			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond Outlet 7/1 **Lab ID: K2107787-008**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	580			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.7			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.8			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1-A 2.0 ASB Inf 7/2 **Lab ID: K2107787-009**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	76			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2-A Foul Cond Inlet 7/2 **Lab ID: K2107787-011**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1900			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	26			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond Outlet 7/2 **Lab ID: K2107787-012**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	330			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	2.2			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.6			1.0	ug/mL	NCASI HAPS-99.01

SAMPLE DETECTION SUMMARY

CLIENT ID: 1-A 2.0 ASB Inf 7/5 **Lab ID: K2107787-013**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	88			0.50	ug/mL	NCASI MeOH-94.03
Acetaldehyde	1.0			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond Inlet 7/5 **Lab ID: K2107787-015**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2000			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	9.7			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	18			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond Outlet 7/5 **Lab ID: K2107787-016**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	360			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.6			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.6			1.0	ug/mL	NCASI HAPS-99.01

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: New-Indy Containerboard **Service Request:**K2107787
Project: Project Columbia

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2107787-001	1-A 2.0 ASB Inf 6/30	6/30/2021	0725
K2107787-002	1-B 2.5 ASB Eff 6/30	6/30/2021	0735
K2107787-003	2-A Foul Cond Inlet 6/30	6/30/2021	0800
K2107787-004	2-B Foul Cond Outlet 6/30	6/30/2021	0805
K2107787-005	1-A 2.0 ASB Inf 7/1	7/1/2021	0725
K2107787-006	1-B 2.5 ASB Eff 7/1	7/1/2021	0730
K2107787-007	2-A Foul Cond Inlet 7/1	7/1/2021	0900
K2107787-008	2-B Foul Cond Outlet 7/1	7/1/2021	0905
K2107787-009	1-A 2.0 ASB Inf 7/2	7/2/2021	0735
K2107787-010	1-B 2.5 ASB Eff 7/2	7/2/2021	0740
K2107787-011	2-A Foul Cond Inlet 7/2	7/2/2021	0800
K2107787-012	2-B Foul Cond Outlet 7/2	7/2/2021	0805
K2107787-013	1-A 2.0 ASB Inf 7/5	7/5/2021	0725
K2107787-014	1-B 2.5 ASB Eff 7/5	7/5/2021	0730
K2107787-015	2-A Foul Cond Inlet 7/5	7/5/2021	0800
K2107787-016	2-B Foul Cond Outlet 7/5	7/5/2021	0805

116722

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COC#

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www.alsglobal.com

Page 1 of 1

Project Name Project Columbia
Project Number:
Project Manager Dan Mallett
Company
Address
Phone # (803) 981-8010
email
Sampler Signature
Sampler Printed Name

K2107787

Samples 2.0 + 2.5 Are pH between 2-3 with H_2SO_4

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 1-A 2.0 ASB InF		6-30-21	0725	WW	1	X	X						X
2. 1-B 2.5 ASB EFF		6-30-21	0735	WW	1	X	X						X
3. 2-A Foul Cond. Inlet		6-30-21	0800	WW	1	X	X						SRH
4. 2-B Foul Cond. outlet		6-30-21	0805	WW	1	X	X						
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#
Bill To:

Turnaround Requirements

___ 24 hr. ✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other ____ (Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
David E Hensley	Ref Secure Area	Garness Harris	Ref Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
DAVID E HENSLEY	Ref Secure Area	Garness Harris	Ref Secure Area		Naomi Pendleton
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy		AS
Firm	Firm	Firm	Firm	Firm	Firm
6-30-21 0750	6-30-21 0750	6-30-21 0810	6-30-21 0810		7-7-21 1015
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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COC#

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Page 1 of 1

Project Name: Project Columbia
Project Number:
Project Manager: Dan Mallett
Company
Address
Phone # (803) 981-8010
email
Sampler Signature
Sampler Printed Name

K2107787

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks Samples 2.0 + 2.5 Are pH between 2-3 with H2SO4
1. 1-A 2.0 ASB InF		7-1-21	0725	WW	1	X	X						X
2. 1-B 2.5 ASB EFF		7-1-21	0730	WW	1	X	X						X
3. 2-A Foul Cond. Inlet		7-1-21	0900	WW	1	X	X						
4. 2-B Foul Cond. outlet		7-1-21	0905	WW	1	X	X						
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.# ____
Bill To: ____

Turnaround Requirements

___ 24 hr.
✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other ____ (Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
	Ref. Secure Area	Garren Harris	Ref. Secure Area		
Signature Mark Knight	Signature Ref. Secure Area	Signature Garness Harris	Signature Ref. Secure Area	Signature	Signature Naomi Pedersen
Printed Name Mark A. Knight	Printed Name New Indy	Printed Name New Indy	Printed Name New Indy	Printed Name	Printed Name AS
Firm NEW Indy	Firm 7-1-21 0745	Firm 7-1-21 0910	Firm 7-1-21 0910	Firm	Firm 7-7-21 1015
Date/Time 7-1-21 0745	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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Project Name Project Columbia

Project Number:

Project Manager Dan Mallett

Company

Address

Phone # (803) 981-8010

email

Sampler Signature

Sampler Printed Name

K2107787

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Samples 2.0 + 2.5 Are pH between 2-3 with H2 SO4 Remarks
1. 1-A 2.0 ASB Inf		7-2-21	0735	ww	1	X	X						X
2. 1-B 2.5 ASB EFF		7-2-21	0740	ww	1	X	X						X
3. 2-A Foul Cond Inlet		7-2-21	0800	ww	1	X	X						
4. 2-B Foul Cond outlet		7-2-21	0805	ww	1	X	X						
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#

Bill To:

Turnaround Requirements

___ 24 hr.
___ 5 Day
___ Standard
✓ 48 hr.

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other ____ (Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Alan Dale Robinson Signature	Ref Secure Area Signature	Garness Harris Signature	Ref Secure Area Signature	Signature	Signature
Alan Dale Robinson Printed Name	Ref Secure Area Printed Name	Garness Harris Printed Name	Ref Secure Area Printed Name	Printed Name	Naomi Pedersen Printed Name
New Indy Firm	New Indy Firm	New Indy Firm	New Indy Firm	Firm	ALS Firm
7-2-21 0755 Date/Time	7-2-21 0755 Date/Time	7-2-21 0810 Date/Time	7-2-21 0810 Date/Time	Date/Time	7-7-21 1015 Date/Time

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COC#

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Page 1 of 1

K2107787

Project Name Project ColumbiA

Project Number:

Project Manager Dan Mallett

Company

Address

Phone # (803) 981-8010

email

Sampler Signature

Sampler Printed Name

Remarks: Samples 2.0 + 2.5 Are pH between 2-3 with H2 SO4

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 1-A 2.0 ASB InF		7-5-21	0725	WW	1	X	X						X
2. 1-B 2.5 ASB EFF		7-5-21	0730	WW	1	X	X						X
3. 2-A Foul Cond. Inlet		7-5-21	0800	WW	1	X	X						
4. 2-B Foul Cond outlet		7-5-21	0805	WW	1	X	X						
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#

Bill To:

Turnaround Requirements

___ 24 hr.
___ 5 Day
___ Standard
✓ 48 hr.

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other ____ (Circle One)

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Mark A Knight	Ref. Secure Area	Garness Harris	Ref Secure Area		
Printed Name	Mark A. Knight	Ref. Secure Area	GARNESS HARRIS	Ref. SECURE AREA		Naomi Pedersen
Firm	New Indy	New Indy	NEW Indy	NEW Indy		ALS
Date/Time	7-5-21 / 0745	7-5-21 / 0745	7-5-21 0810	7-5-21 0810		7-7-21 1015

PM SW

Cooler Receipt and Preservation Form

Client New Indy Service Request **K21** 07787

Received: 7·7·21 Opened: 7·7·21 By: AP Unloaded: 7·7·21 By: AP

1. Samples were received via? *USPS* [✓ *Fed Ex*] *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) [✓ *Cooler*] *Box* *Envelope* *Other* ________ *NA*
3. Were custody seals on coolers? NA Y [✓ N] If yes, how many and where? ________

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y [✓ N] If yes, notate the temperature in the appropriate column below:

   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N

   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
—	2.6	IR02	116722			1Z 221 430 019675	
						7818	

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* ________
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* [✓ NA] Y N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: ________

RUSH

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: New-Indy Containerboard
Project: Project Columbia/
Service Request: K2107787

Sample Name: 1-A 2.0 ASB Inf 6/30
Lab Code: K2107787-001
Sample Matrix: Water
Date Collected: 06/30/21
Date Received: 07/7/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 1-B 2.5 ASB Eff 6/30
Lab Code: K2107787-002
Sample Matrix: Water
Date Collected: 06/30/21
Date Received: 07/7/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond Inlet 6/30
Lab Code: K2107787-003
Sample Matrix: Water
Date Collected: 06/30/21
Date Received: 07/7/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond Outlet 6/30
Lab Code: K2107787-004
Sample Matrix: Water
Date Collected: 06/30/21
Date Received: 07/7/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: New-Indy Containerboard
Service Request: K2107787
Project: Project Columbia/

Sample Name: 1-A 2.0 ASB Inf 7/1
Date Collected: 07/1/21
Lab Code: K2107787-005
Date Received: 07/7/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 1-B 2.5 ASB Eff 7/1
Date Collected: 07/1/21
Lab Code: K2107787-006
Date Received: 07/7/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond Inlet 7/1
Date Collected: 07/1/21
Lab Code: K2107787-007
Date Received: 07/7/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond Outlet 7/1
Date Collected: 07/1/21
Lab Code: K2107787-008
Date Received: 07/7/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Analyst Summary report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia/		

Sample Name:	1-A 2.0 ASB Inf 7/2	**Date Collected:**	07/2/21
Lab Code:	K2107787-009	**Date Received:**	07/7/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	1-B 2.5 ASB Eff 7/2	**Date Collected:**	07/2/21
Lab Code:	K2107787-010	**Date Received:**	07/7/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	2-A Foul Cond Inlet 7/2	**Date Collected:**	07/2/21
Lab Code:	K2107787-011	**Date Received:**	07/7/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	2-B Foul Cond Outlet 7/2	**Date Collected:**	07/2/21
Lab Code:	K2107787-012	**Date Received:**	07/7/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Analyst Summary report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia/		

Sample Name:	1-A 2.0 ASB Inf 7/5	**Date Collected:**	07/5/21
Lab Code:	K2107787-013	**Date Received:**	07/7/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	1-B 2.5 ASB Eff 7/5	**Date Collected:**	07/5/21
Lab Code:	K2107787-014	**Date Received:**	07/7/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	2-A Foul Cond Inlet 7/5	**Date Collected:**	07/5/21
Lab Code:	K2107787-015	**Date Received:**	07/7/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	2-B Foul Cond Outlet 7/5	**Date Collected:**	07/5/21
Lab Code:	K2107787-016	**Date Received:**	07/7/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Results

ALS Environmental—Kelso Laboratory
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Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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Client:	New-Indy Containerboard		**Service Request:**	K2107787
Project:	Project Columbia		**Date Collected:**	06/30/21 07:25
Sample Matrix:	Water		**Date Received:**	07/07/21 10:15
Sample Name:	1-A 2.0 ASB Inf 6/30		**Units:**	ug/mL
Lab Code:	K2107787-001		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/08/21 22:45	7/8/21	
Acetaldehyde	ND U	1.0	1	07/08/21 22:45	7/8/21	
Propionaldehyde	ND U	1.0	1	07/08/21 22:45	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	06/30/21 07:35
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-B 2.5 ASB Eff 6/30	**Units:**	ug/mL
Lab Code:	K2107787-002	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	07/08/21 23:42	7/8/21	
Acetaldehyde	ND	U	1.0	1	07/08/21 23:42	7/8/21	
Propionaldehyde	ND	U	1.0	1	07/08/21 23:42	7/8/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	06/30/21 08:00
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-A Foul Cond Inlet 6/30	**Units:**	ug/mL
Lab Code:	K2107787-003	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**14**	1.0	1	07/09/21 09:57	7/8/21	
Acetaldehyde	**26**	1.0	1	07/09/21 09:57	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 09:57	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	06/30/21 08:05
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-B Foul Cond Outlet 6/30	**Units:**	ug/mL
Lab Code:	K2107787-004	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**14**		1.0	1	07/09/21 00:22	7/8/21	
Acetaldehyde	**25**		1.0	1	07/09/21 00:22	7/8/21	
Propionaldehyde	ND	U	1.0	1	07/09/21 00:22	7/8/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/01/21 07:25
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-A 2.0 ASB Inf 7/1	**Units:**	ug/mL
Lab Code:	K2107787-005	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 00:42	7/8/21	
Acetaldehyde	ND U	1.0	1	07/09/21 00:42	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 00:42	7/8/21	

Client:	New-Indy Containerboard		**Service Request:**	K2107787
Project:	Project Columbia		**Date Collected:**	07/01/21 07:30
Sample Matrix:	Water		**Date Received:**	07/07/21 10:15
Sample Name:	1-B 2.5 ASB Eff 7/1		**Units:**	ug/mL
Lab Code:	K2107787-006		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 01:02	7/8/21	
Acetaldehyde	ND U	1.0	1	07/09/21 01:02	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 01:02	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/01/21 09:00
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-A Foul Cond Inlet 7/1	**Units:**	ug/mL
Lab Code:	K2107787-007	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**11**		1.0	1	07/09/21 10:17	7/8/21	
Acetaldehyde	**22**		1.0	1	07/09/21 10:17	7/8/21	
Propionaldehyde	ND	U	1.0	1	07/09/21 10:17	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/01/21 09:05
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-B Foul Cond Outlet 7/1	**Units:**	ug/mL
Lab Code:	K2107787-008	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.7**		1.0	1	07/09/21 01:42	7/8/21	
Acetaldehyde	**3.8**		1.0	1	07/09/21 01:42	7/8/21	
Propionaldehyde	ND	U	1.0	1	07/09/21 01:42	7/8/21	

Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2107787
Project:	Project Columbia		**Date Collected:**	07/02/21 07:35
Sample Matrix:	Water		**Date Received:**	07/07/21 10:15
Sample Name:	1-A 2.0 ASB Inf 7/2		**Units:**	ug/mL
Lab Code:	K2107787-009		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 02:02	7/8/21	
Acetaldehyde	ND U	1.0	1	07/09/21 02:02	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 02:02	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/02/21 07:40
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-B 2.5 ASB Eff 7/2	**Units:**	ug/mL
Lab Code:	K2107787-010	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 02:22	7/8/21	
Acetaldehyde	ND U	1.0	1	07/09/21 02:22	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 02:22	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/02/21 08:00
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-A Foul Cond Inlet 7/2	**Units:**	ug/mL
Lab Code:	K2107787-011	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**		1.0	1	07/09/21 10:37	7/8/21	
Acetaldehyde	**26**		1.0	1	07/09/21 10:37	7/8/21	
Propionaldehyde	ND	U	1.0	1	07/09/21 10:37	7/8/21	

Client: New-Indy Containerboard
Project: Project Columbia
Sample Matrix: Water

Service Request: K2107787
Date Collected: 07/02/21 08:05
Date Received: 07/07/21 10:15

Sample Name: 2-B Foul Cond Outlet 7/2
Lab Code: K2107787-012

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**2.2**	1.0	1	07/09/21 03:03	7/8/21	
Acetaldehyde	**3.6**	1.0	1	07/09/21 03:03	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 03:03	7/8/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/05/21 07:25
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-A 2.0 ASB Inf 7/5	**Units:**	ug/mL
Lab Code:	K2107787-013	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01

Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	07/09/21 03:23	7/8/21	
Acetaldehyde	**1.0**		1.0	1	07/09/21 03:23	7/8/21	
Propionaldehyde	ND	U	1.0	1	07/09/21 03:23	7/8/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/05/21 07:30
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-B 2.5 ASB Eff 7/5	**Units:**	ug/mL
Lab Code:	K2107787-014	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 04:43	7/8/21	
Acetaldehyde	ND U	1.0	1	07/09/21 04:43	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 04:43	7/8/21	

Analytical Report

Client: New-Indy Containerboard
Project: Project Columbia
Sample Matrix: Water

Service Request: K2107787
Date Collected: 07/05/21 08:00
Date Received: 07/07/21 10:15

Sample Name: 2-A Foul Cond Inlet 7/5
Lab Code: K2107787-015

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**9.7**	1.0	1	07/09/21 10:58	7/8/21	
Acetaldehyde	**18**	1.0	1	07/09/21 10:58	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 10:58	7/8/21	

Client: New-Indy Containerboard
Project: Project Columbia
Sample Matrix: Water

Service Request: K2107787
Date Collected: 07/05/21 08:05
Date Received: 07/07/21 10:15

Sample Name: 2-B Foul Cond Outlet 7/5
Lab Code: K2107787-016

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.6**	1.0	1	07/09/21 05:23	7/8/21	
Acetaldehyde	**3.6**	1.0	1	07/09/21 05:23	7/8/21	
Propionaldehyde	ND U	1.0	1	07/09/21 05:23	7/8/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	06/30/21 07:25
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-A 2.0 ASB Inf 6/30	**Units:**	ug/mL
Lab Code:	K2107787-001	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**120**	0.50	1	07/08/21 22:45	7/8/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	06/30/21 07:35
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-B 2.5 ASB Eff 6/30	**Units:**	ug/mL
Lab Code:	K2107787-002	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/08/21 23:42	7/8/21	

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Superset Reference:21-0000595999 rev 00

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	06/30/21 08:00
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-A Foul Cond Inlet 6/30	**Units:**	ug/mL
Lab Code:	K2107787-003	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2700**	5.0	10	07/09/21 00:02	7/8/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	06/30/21 08:05
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-B Foul Cond Outlet 6/30	**Units:**	ug/mL
Lab Code:	K2107787-004	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**3400**	5.0	10	07/09/21 11:38	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/01/21 07:25
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-A 2.0 ASB Inf 7/1	**Units:**	ug/mL
Lab Code:	K2107787-005	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**85**	0.50	1	07/09/21 00:42	7/8/21	

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Analytical Report

Client: New-Indy Containerboard
Project: Project Columbia
Sample Matrix: Water

Service Request: K2107787
Date Collected: 07/01/21 07:30
Date Received: 07/07/21 10:15

Sample Name: 1-B 2.5 ASB Eff 7/1
Lab Code: K2107787-006

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/09/21 01:02	7/8/21	

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Superset Reference:21-0000595999 rev 00

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/01/21 09:00
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-A Foul Cond Inlet 7/1	**Units:**	ug/mL
Lab Code:	K2107787-007	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1700**	5.0	10	07/09/21 01:22	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/01/21 09:05
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-B Foul Cond Outlet 7/1	**Units:**	ug/mL
Lab Code:	K2107787-008	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**580**	0.50	1	07/09/21 01:42	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/02/21 07:35
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-A 2.0 ASB Inf 7/2	**Units:**	ug/mL
Lab Code:	K2107787-009	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**76**	0.50	1	07/09/21 02:02	7/8/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/02/21 07:40
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-B 2.5 ASB Eff 7/2	**Units:**	ug/mL
Lab Code:	K2107787-010	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/09/21 02:22	7/8/21	

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Superset Reference:21-0000595999 rev 00

Analytical Report

Client: New-Indy Containerboard
Project: Project Columbia
Sample Matrix: Water

Service Request: K2107787
Date Collected: 07/02/21 08:00
Date Received: 07/07/21 10:15

Sample Name: 2-A Foul Cond Inlet 7/2
Lab Code: K2107787-011

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1900**	5.0	10	07/09/21 02:42	7/8/21	

Client: New-Indy Containerboard
Project: Project Columbia
Sample Matrix: Water

Service Request: K2107787
Date Collected: 07/02/21 08:05
Date Received: 07/07/21 10:15

Sample Name: 2-B Foul Cond Outlet 7/2
Lab Code: K2107787-012

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**330**	0.50	1	07/09/21 03:03	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/05/21 07:25
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-A 2.0 ASB Inf 7/5	**Units:**	ug/mL
Lab Code:	K2107787-013	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**88**	0.50	1	07/09/21 03:23	7/8/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/05/21 07:30
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	1-B 2.5 ASB Eff 7/5	**Units:**	ug/mL
Lab Code:	K2107787-014	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/09/21 04:43	7/8/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/05/21 08:00
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-A Foul Cond Inlet 7/5	**Units:**	ug/mL
Lab Code:	K2107787-015	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2000**	5.0	10	07/09/21 05:03	7/8/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	07/05/21 08:05
Sample Matrix:	Water	**Date Received:**	07/07/21 10:15
Sample Name:	2-B Foul Cond Outlet 7/5	**Units:**	ug/mL
Lab Code:	K2107787-016	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**360**	0.50	1	07/09/21 05:23	7/8/21	

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Superset Reference:21-0000595999 rev 00

QC Summary Forms

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
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Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112579-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/08/21 18:13	7/8/21	
Acetaldehyde	ND U	1.0	1	07/08/21 18:13	7/8/21	
Propionaldehyde	ND U	1.0	1	07/08/21 18:13	7/8/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107787
Project:	Project Columbia	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112581-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/08/21 16:55	7/8/21	

July 12, 2021 Service Request No:K2107883

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: DHEC Order

Dear Daniel,

Enclosed are the results of the sample(s) submitted to our laboratory July 08, 2021
For your reference, these analyses have been assigned our service request number **K2107883.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Sydney A. Wolf
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
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ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
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RIGHT SOLUTIONS | RIGHT PARTNER

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Received:**	07/08/2021
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Twenty four water samples were received for analysis at ALS Environmental on 07/08/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method NCASI MeOH-94.03, 07/09/2021: Samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Method NCASI MeOH-94.03, 07/09/2021: The control criteria for matrix spike recovery of Methanol for sample Batch QC were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by Sydney A Wolf

Date 07/12/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 2-A Foul Cond. Inlet 7/1 Composite **Lab ID: K2107883-004**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1900			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	11			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	24			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 7/2 Composite **Lab ID: K2107883-008**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1600			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	8.8			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	21			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 7/3 Composite **Lab ID: K2107883-012**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2000			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	21			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 7/4 Composite **Lab ID: K2107883-016**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2200			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	12			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	19			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 7/5 Composite **Lab ID: K2107883-020**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1400			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	6.2			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	18			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-A Foul Cond. Inlet 7/6 Composite **Lab ID: K2107883-024**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1600			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	5.6			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	14			1.0	ug/mL	NCASI HAPS-99.01

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2107883-004	2-A Foul Cond. Inlet 7/1 Composite	7/1/2021	0900
K2107883-008	2-A Foul Cond. Inlet 7/2 Composite	7/2/2021	0800
K2107883-012	2-A Foul Cond. Inlet 7/3 Composite	7/3/2021	0800
K2107883-016	2-A Foul Cond. Inlet 7/4 Composite	7/4/2021	0800
K2107883-020	2-A Foul Cond. Inlet 7/5 Composite	7/5/2021	0800
K2107883-024	2-A Foul Cond. Inlet 7/6 Composite	7/6/2021	0800

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001

SR# K2107883
COC Set____of____
COC#________

Page 1 of 1

Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company: New Indy Container Board
Address: 5300 Curetan Ferry Rd / Catawba, SC 29704
Phone #: (803) 981-8010
email: Dan.mallett@new-indycb.com
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	NCASI HAPS-99.01 / HAPS 14D	NCASI MeOH-94.03 / MeOH 30D	1	2	3	4	5	Remarks
1. 2-A Foul Cond. Inlet		7-1-21	0900	WW	1	X	X						Composite
2. 2-A Foul Cond. Inlet		7-1-21	1300	WW	1	X	X						before
3. 2-A Foul Cond. Inlet		7-1-21	1700	WW	1	X	X						Analysis
4. 2-A Foul Cond. Inlet		7-2-21	0800	WW	1	X	X						Composite
5. 2-A Foul Cond. Inlet		7-2-21	1200	WW	1	X	X						before
6. 2-A Foul Cond. Inlet		7-2-21	1600	WW	1	X	X						Analysis
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#________
Bill To:________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification*

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Garness Harris	Ref. Secure Area	Garness Harris	Ref Secure Area		
Printed Name	Garness Harris	Ref. Secure Area	Garness Harris	Ref Secure Area		Cody Graves
Firm	New Indy	New Indy	New Indy	New Indy	UPS	ALS
Date/Time	7-1-21 0910	7-1-21 0910	7-2-21 0810	7-2-21 0810		7/8/21 1040
	7-1-21 1305	7-1-21 1305	7-2-21 1205	7-2-21 1205		
	7-1-21 1705	7-1-21 1705	7-2-21 1605	7-2-21 1605		

116722

CHAIN OF CUSTODY

116722

001

SR# K2107883

COC Set____of____

COC#__________

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company: New Indy Container Board
Address: 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone #: (803) 981-8010
email: Dan.mallett@new-indycb.com
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	NCASI HAPS-99.01 / HAPS 14D	NCASI MeOH-94.03 / MeOH 30D	1	2	3	4	5	Remarks
1. 2A Foul Cond Inlet		7-3-21	0800	WW	1	X	X						Composite
2. 2A Foul Cond. Inlet		7-3-21	1200	WW	1	X	X						before
3. 2A Foul Cond. Inlet		7-3-21	1600	WW	1	X	X						Analysis
4. 2A Foul cond. Inlet		7-4-21	0800	WW	1	X	X						Composite
5. 2A Foul Cond. Inlet		7-4-21	1240	WW	1	X	X						before
6. 2A Foul Cond. Inlet		7-4-21	1640	WW	1	X	X						Analysis
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____ (Circle One)

* Sample Date and Time crucial for sample identification *

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Garness Harris	Ref Secure Area	Garness Harris	Ref Secure Area		
Printed Name	Garness Harris	Ref Secure Area	Garness Harris	Ref. Secure Area		Cody Graves
Firm	New Indy	New Indy	New Indy	New Indy	UPS	ALS
Date/Time	7-3-21 0805	7-3-21 0805	7-4-21 0805	7-4-21 0805		7/8/21 1040
	7-3-21 1205	7-3-21 1205	7-4-21 1245	7-4-21 1245		
	7-3-21 1605	7-3-21 1605	7-4-21 1645	7-4-21 1645		

ALS

116722

CHAIN OF CUSTODY

116722

001

SR# K2107883

COC Set____of____

COC#__________

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www.alsglobal.com

Page 1 of 1

Project Name DHEC Order
Project Number:
Project Manager Dan Mallett
Company New Indy Container Board
Address 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone # (803) 981-8010
email Dan.mallett@new-indycb.com
Sampler Signature
Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	NCASI HAPS-99.01 / HAPS 14D	NCASI MeOH-94.03 / MeOH 30D	1	2	3	4	5	Remarks
1. 2-A Foul Cond. Inlet		7-5-21	0800	WW	1	X	X						Composite
2. 2-A Foul Cond. Inlet		7-5-21	1200	WW	1	X	X						before
3. 2-A Foul Cond. Inlet		7-5-21	1600	WW	1	X	X						Analysis
4. 2-A Foul Cond. Inlet		7-6-21	0800	WW	1	X	X						Composite
5. 2-A Foul Cond Inlet		7-6-21	1200	WW	1	X	X						before
6. 2-A Foul Cond. Inlet		7-6-21	1600	WW	1	X	X						Analysis
7.													
8.													
9. 2-A Foul Cond. Inlet		6-29-21	1600	WW	1	X	X						Replacement for
10.													broken vial

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#__________
Bill To:__________

Turnaround Requirements

____ 24 hr. ✓ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification*

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garness Harris	Ref. Secure Area	Garness Harris	Ref Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
GARNESS HARRIS	Ref Secure Area	GARNESS HARRIS	Ref Secure Area		Cody Graves
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
NEW Indy	NEW Indy	NEW Indy	NEW Indy	UPS	ALS
Firm	Firm	Firm	Firm	Firm	Firm
7-5-21 0810	7-5-21 0810	7-6-21 0810	7-6-21 0810		7/8/21 1040
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
7-5-21 1205	7-5-21 1205	7-6-21 1205	7-6-21 1205		
7-5-21 1605	7-5-21 1605	7-6-21 1605	7-6-21 1605		

PM SW

Cooler Receipt and Preservation Form

Client New Indy Service Request K21 07883

Received: 7/8/21 Opened: 7/8/21 By: CG Unloaded: 7/8/21 By: CG

1. Samples were received via? USPS Fed Ex [✓ UPS] DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) [✓ Cooler] Box Envelope Other ________ NA
3. Were custody seals on coolers? NA [✓ Y] N If yes, how many and where? 1 Front
   If present, were custody seals intact? [✓ Y] N If present, were they signed and dated? [✓ Y] N
4. Was a Temperature Blank present in cooler? NA [✓ Y] N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / [✓ NA]	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
2.4	—	IR02		—	—	1Z22143001 97896238	

6. Packing material: Inserts Baggies [✓ Bubble Wrap] Gel Packs [✓ Wet Ice] Dry Ice Sleeves ________
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA [✓ Y] N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions:

RUSH

Miscellaneous Forms

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1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory’s NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2107883

Sample Name: 2-A Foul Cond. Inlet 7/1 Composite
Lab Code: K2107883-004
Sample Matrix: Water
Date Collected: 07/1/21
Date Received: 07/8/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet 7/2 Composite
Lab Code: K2107883-008
Sample Matrix: Water
Date Collected: 07/2/21
Date Received: 07/8/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet 7/3 Composite
Lab Code: K2107883-012
Sample Matrix: Water
Date Collected: 07/3/21
Date Received: 07/8/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet 7/4 Composite
Lab Code: K2107883-016
Sample Matrix: Water
Date Collected: 07/4/21
Date Received: 07/8/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Analyst Summary report

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order/		

Sample Name:	2-A Foul Cond. Inlet 7/5 Composite	**Date Collected:**	07/5/21
Lab Code:	K2107883-020	**Date Received:**	07/8/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name:	2-A Foul Cond. Inlet 7/6 Composite	**Date Collected:**	07/6/21
Lab Code:	K2107883-024	**Date Received:**	07/8/21
Sample Matrix:	Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Results

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
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RIGHT SOLUTIONS | RIGHT PARTNER

Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/01/21 09:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet 7/1 Composite	**Units:**	ug/mL
Lab Code:	K2107883-004	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**11**	1.0	1	07/09/21 23:07	7/9/21	
Acetaldehyde	**24**	1.0	1	07/09/21 23:07	7/9/21	
Propionaldehyde	ND U	1.0	1	07/09/21 23:07	7/9/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/02/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet 7/2 Composite	**Units:**	ug/mL
Lab Code:	K2107883-008	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**8.8**	1.0	1	07/09/21 23:26	7/9/21	
Acetaldehyde	**21**	1.0	1	07/09/21 23:26	7/9/21	
Propionaldehyde	ND U	1.0	1	07/09/21 23:26	7/9/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107883
Date Collected: 07/03/21 08:00
Date Received: 07/08/21 10:40

Sample Name: 2-A Foul Cond. Inlet 7/3 Composite
Lab Code: K2107883-012

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**	1.0	1	07/09/21 23:46	7/9/21	
Acetaldehyde	**21**	1.0	1	07/09/21 23:46	7/9/21	
Propionaldehyde	ND U	1.0	1	07/09/21 23:46	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/04/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet 7/4 Composite	**Units:**	ug/mL
Lab Code:	K2107883-016	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**12**	1.0	1	07/10/21 00:06	7/9/21	
Acetaldehyde	**19**	1.0	1	07/10/21 00:06	7/9/21	
Propionaldehyde	ND U	1.0	1	07/10/21 00:06	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/05/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet 7/5 Composite	**Units:**	ug/mL
Lab Code:	K2107883-020	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**6.2**	1.0	1	07/10/21 00:26	7/9/21	
Acetaldehyde	**18**	1.0	1	07/10/21 00:26	7/9/21	
Propionaldehyde	ND U	1.0	1	07/10/21 00:26	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/06/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet 7/6 Composite	**Units:**	ug/mL
Lab Code:	K2107883-024	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**5.6**		1.0	1	07/10/21 00:45	7/9/21	
Acetaldehyde	**14**		1.0	1	07/10/21 00:45	7/9/21	
Propionaldehyde	ND	U	1.0	1	07/10/21 00:45	7/9/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107883
Date Collected: 07/01/21 09:00
Date Received: 07/08/21 10:40

Sample Name: 2-A Foul Cond. Inlet 7/1 Composite
Lab Code: K2107883-004

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1900**	5.0	10	07/09/21 20:05	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/02/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40

Sample Name:	2-A Foul Cond. Inlet 7/2 Composite	**Units:**	ug/mL
Lab Code:	K2107883-008	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1600**	5.0	10	07/09/21 20:25	7/9/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/03/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet 7/3 Composite	**Units:**	ug/mL
Lab Code:	K2107883-012	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2000**	5.0	10	07/09/21 20:46	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/04/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40

Sample Name:	2-A Foul Cond. Inlet 7/4 Composite	**Units:**	ug/mL
Lab Code:	K2107883-016	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2200**	5.0	10	07/09/21 21:06	7/9/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/05/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet 7/5 Composite	**Units:**	ug/mL
Lab Code:	K2107883-020	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1400**	5.0	10	07/09/21 21:26	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	07/06/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet 7/6 Composite	**Units:**	ug/mL
Lab Code:	K2107883-024	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1600**	5.0	10	07/09/21 21:46	7/9/21	

QC Summary Forms

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Semivolatile Organic Compounds by GC

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Client:	New-Indy Containerboard	**Service Request:**	K2107883
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112679-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 16:21	7/9/21	
Acetaldehyde	ND U	1.0	1	07/09/21 16:21	7/9/21	
Propionaldehyde	ND U	1.0	1	07/09/21 16:21	7/9/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Water

Service Request: K2107883
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ2112690-04

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/09/21 15:41	7/9/21	

July 12, 2021 Service Request No:K2107894

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: Project Columbia

Dear Daniel,

Enclosed are the results of the sample(s) submitted to our laboratory July 08, 2021
For your reference, these analyses have been assigned our service request number **K2107894.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Sydney A. Wolf
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

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Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Received:**	07/08/2021
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Four water samples were received for analysis at ALS Environmental on 07/08/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method NCASI MeOH-94.03, 07/09/2021: Sample 2-A Foul Cond. Inlet required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Method NCASI MeOH-94.03, 07/09/2021: The control criteria for matrix spike recovery of Methanol for sample Batch QC were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by ______________________ Date 07/12/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 1-A 2.0 ASB INF **Lab ID: K2107894-001**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	66			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2-A Foul Cond. Inlet **Lab ID: K2107894-003**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	1500			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	6.7			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	17			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2-B Foul Cond. Outlet **Lab ID: K2107894-004**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	280			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.1			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.3			1.0	ug/mL	NCASI HAPS-99.01

Sample Receipt Information

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: New-Indy Containerboard **Service Request:** K2107894
Project: Project Columbia

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2107894-001	1-A 2.0 ASB INF	7/6/2021	0730
K2107894-002	1-B 2.5 ASB EFF	7/6/2021	0735
K2107894-003	2-A Foul Cond. Inlet	7/6/2021	0800
K2107894-004	2-B Foul Cond. Outlet	7/6/2021	0805

116722

CHAIN OF CUSTODY

116722

001

SR# K2107894

COC Set_____of_____

COC#____________

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Page 1 of 1

Project Name Project Columbia

Project Number:

Project Manager Dan Mallett

Company

Address

Phone # (803) 981-8010

email

Sampler Signature

Sampler Printed Name

	CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks Samples 2.0 + 2.5 Are pH between 2-3 with H2 SO4
1.	1-A 2.0 ASB InF		7-6-21	0730	WW	1	X	X						X
2.	1-B 2.5 ASB EFF		7-6-21	0735	WW	1	X	X						X
3.	2-A Foul Cond. Inlet		7-6-21	0800	WW	1	X	X						
4.	2-B Foul Cond. outlet		7-6-21	0805	WW	1	X	X						
5.														
6.														
7.														
8.														
9.														
10.														

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#____________

Bill To:____________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.

___ 5 Day

___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Mark A. Knight	Ref. Secure Area	Garness Harris	Ref. Secure Area		
Printed Name	Mark A. Knight	Ref. Secure Area	Garness Harris	Ref. Secure Area		Cody Graves
Firm	New Indy	New Indy	NEW Indy	New Indy	NPS	ALS
Date/Time	7-6-21 0750	7-6-21 0750	7-6-21 0810	7-6-21 0810		7/8/21 1040

K2107894 **PM** SW

Cooler Receipt and Preservation Form

Client New Indy Service Request K21 ~~07883~~ CG 7/8

Received: 7/8/21 Opened: 7/8/21 By: CG Unloaded: 7/8/21 By: CG

1. Samples were received via? *USPS* *Fed Ex* [✓ *UPS*] *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) [✓ *Cooler*] *Box* *Envelope* *Other* ______ *NA*
3. Were custody seals on coolers? NA [✓ Y] N If yes, how many and where? 1 Front

   If present, were custody seals intact? [✓ Y] N If present, were they signed and dated? [✓ Y] N
4. Was a Temperature Blank present in cooler? NA [✓ Y] N If yes, notate the temperature in the appropriate column below:

   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N

   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / [✓ NA]	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
2.4	—	IR02		—	—	1Z2214300197896238	

6. Packing material: *Inserts* *Baggies* [✓ *Bubble Wrap*] *Gel Packs* [✓ *Wet Ice*] *Dry Ice* *Sleeves* ______
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA [✓ Y] N
14. Was Cl2/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions:

RUSH

Miscellaneous Forms

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory’s NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Analyst Summary report

Client: New-Indy Containerboard
Service Request: K2107894
Project: Project Columbia/

Sample Name: 1-A 2.0 ASB INF
Date Collected: 07/6/21
Lab Code: K2107894-001
Date Received: 07/8/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 1-B 2.5 ASB EFF
Date Collected: 07/6/21
Lab Code: K2107894-002
Date Received: 07/8/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-A Foul Cond. Inlet
Date Collected: 07/6/21
Lab Code: K2107894-003
Date Received: 07/8/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Name: 2-B Foul Cond. Outlet
Date Collected: 07/6/21
Lab Code: K2107894-004
Date Received: 07/8/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	SSMITH
NCASI MeOH-94.03	TPOTTSCHMIDT	SSMITH

Sample Results

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Semivolatile Organic Compounds by GC

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Client: New-Indy Containerboard
Project: Project Columbia
Sample Matrix: Water

Service Request: K2107894
Date Collected: 07/06/21 07:30
Date Received: 07/08/21 10:40

Sample Name: 1-A 2.0 ASB INF
Lab Code: K2107894-001

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	07/09/21 17:01	7/9/21	
Acetaldehyde	ND	U	1.0	1	07/09/21 17:01	7/9/21	
Propionaldehyde	ND	U	1.0	1	07/09/21 17:01	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	07/06/21 07:35
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	1-B 2.5 ASB EFF	**Units:**	ug/mL
Lab Code:	K2107894-002	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 17:22	7/9/21	
Acetaldehyde	ND U	1.0	1	07/09/21 17:22	7/9/21	
Propionaldehyde	ND U	1.0	1	07/09/21 17:22	7/9/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	07/06/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-A Foul Cond. Inlet	**Units:**	ug/mL
Lab Code:	K2107894-003	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**6.7**		1.0	1	07/09/21 18:23	7/9/21	
Acetaldehyde	**17**		1.0	1	07/09/21 18:23	7/9/21	
Propionaldehyde	ND	U	1.0	1	07/09/21 18:23	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	07/06/21 08:05
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-B Foul Cond. Outlet	**Units:**	ug/mL
Lab Code:	K2107894-004	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.1**		1.0	1	07/09/21 18:43	7/9/21	
Acetaldehyde	**3.3**		1.0	1	07/09/21 18:43	7/9/21	
Propionaldehyde	ND	U	1.0	1	07/09/21 18:43	7/9/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	07/06/21 07:30
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	1-A 2.0 ASB INF	**Units:**	ug/mL
Lab Code:	K2107894-001	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**66**	0.50	1	07/09/21 17:01	7/9/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	07/06/21 07:35
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	1-B 2.5 ASB EFF	**Units:**	ug/mL
Lab Code:	K2107894-002	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/09/21 17:22	7/9/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	07/06/21 08:00
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40

Sample Name:	2-A Foul Cond. Inlet	**Units:**	ug/mL
Lab Code:	K2107894-003	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**1500**	5.0	10	07/09/21 17:42	7/9/21	

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	07/06/21 08:05
Sample Matrix:	Water	**Date Received:**	07/08/21 10:40
Sample Name:	2-B Foul Cond. Outlet	**Units:**	ug/mL
Lab Code:	K2107894-004	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**280**	0.50	1	07/09/21 18:43	7/9/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112679-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/09/21 16:21	7/9/21	
Acetaldehyde	ND U	1.0	1	07/09/21 16:21	7/9/21	
Propionaldehyde	ND U	1.0	1	07/09/21 16:21	7/9/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2107894
Project:	Project Columbia	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112690-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/09/21 15:41	7/9/21	

Printed 7/12/2021 4:03:53 PM

Superset Reference:21-0000596141 rev 00

July 19, 2021 Service Request No:K2108059

Daniel Mallett
New-Indy Catawba LLC
5300 Cureton Ferry Road
P.O. Box 7
Catawba, SC 29704

Laboratory Results for: DHEC Order

Dear Daniel,

Enclosed are the results of the sample(s) submitted to our laboratory July 13, 2021
For your reference, these analyses have been assigned our service request number **K2108059.**

Analyses were performed according to our laboratory’s NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A Wolf

Sydney A. Wolf
Project Manager

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Narrative Documents

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Received: 07/13/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Seventy eight wastewater samples were received for analysis at ALS Environmental on 07/13/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method NCASI HAPS-99.01, 07/15/2021: The detection limit was elevated for analytes in samples 2A-Foul Cond. Inlet 7/11 1220, 2A-Foul Cond. Inlet 7/11 0815 and 2A-Foul Cond. Inlet 7/10 0820. The chromatogram indicated the presence of non-target background components that interfered with the internal standard. The matrix interference prevented adequate resolution of the target compounds at the normal limit. The samples were reran producing similar results, the reporting limits are adjusted to reflect the dilution from the matrix interference. No further corrective action is appropriate.

Method NCASI MeOH-94.03: Multiple samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Approved by Sydney A Wolfe

Date 07/19/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: 2A-Foul Cond. Inlet 7/11 1610 **Lab ID: K2108059-001**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2000			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	4.5			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	18			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/11 1615 **Lab ID: K2108059-002**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	360			0.50	ug/mL	NCASI MeOH-94.03
Acetaldehyde	2.5			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1A-ASB Inf. 7/11 1640 **Lab ID: K2108059-003**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	89			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 1B-ASB Eff. 7/11 1645 **Lab ID: K2108059-004**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	0.93			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5A-ASB Zone 1 7/11 1612 **Lab ID: K2108059-005**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	43			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/11 1644 **Lab ID: K2108059-006**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	9.3			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/11 1220 **Lab ID: K2108059-008**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2000			5.0	ug/mL	NCASI MeOH-94.03
Acetaldehyde	29			10	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/11 1225 **Lab ID: K2108059-009**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	360			0.50	ug/mL	NCASI MeOH-94.03
Acetaldehyde	2.8			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1A-ASB Inf. 7/11 1255 **Lab ID: K2108059-010**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	89			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 1B-ASB Eff. 7/11 1300 **Lab ID: K2108059-011**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	0.94			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5A-ASB Zone 1 7/11 1225 **Lab ID: K2108059-012**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	43			0.50	ug/mL	NCASI MeOH-94.03

SAMPLE DETECTION SUMMARY

CLIENT ID: 5B-ASB Zone 2 7/11 1249 **Lab ID: K2108059-013**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	12			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/11 0815 **Lab ID: K2108059-015**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2000			5.0	ug/mL	NCASI MeOH-94.03
Acetaldehyde	28			10	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/11 0820 **Lab ID: K2108059-016**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	390			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.0			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.2			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1A-ASB Inf. 7/11 0850 **Lab ID: K2108059-017**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	70			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 1B-ASB Eff. 7/11 0855 **Lab ID: K2108059-018**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	0.67			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5A-ASB Zone 1 7/11 0835 **Lab ID: K2108059-019**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	45			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/11 0904 **Lab ID: K2108059-020**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	12			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/10 1605 **Lab ID: K2108059-022**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2300			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	5.9			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	22			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/10 1610 **Lab ID: K2108059-023**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	420			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.2			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.6			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1A-ASB Inf. 7/10 1640 **Lab ID: K2108059-024**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	84			0.50	ug/mL	NCASI MeOH-94.03

SAMPLE DETECTION SUMMARY

CLIENT ID: 5A-ASB Zone 1 7/10 1700 **Lab ID: K2108059-026**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	61			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/10 1632 **Lab ID: K2108059-027**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	11			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/10 1215 **Lab ID: K2108059-029**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2300			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	6.3			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	23			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/10 1220 **Lab ID: K2108059-030**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	390			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.3			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.2			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1A-ASB Inf. 7/10 1304 **Lab ID: K2108059-031**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	81			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5A-ASB Zone 1 7/10 1307 **Lab ID: K2108059-033**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	57			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/10 1233 **Lab ID: K2108059-034**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	8.4			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/10 0820 **Lab ID: K2108059-036**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2200			5.0	ug/mL	NCASI MeOH-94.03
Acetaldehyde	31			10	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out 7/10 0825 **Lab ID: K2108059-037**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	410			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.4			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.8			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1A-ASB Inf. 7/10 0850 **Lab ID: K2108059-038**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	110			0.50	ug/mL	NCASI MeOH-94.03

SAMPLE DETECTION SUMMARY

CLIENT ID: 5A-ASB Zone 1 7/10 0939 **Lab ID: K2108059-040**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	59			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/10 0831 **Lab ID: K2108059-041**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	8.4			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5A-ASB Zone 1 7/10 0939 Dup **Lab ID: K2108059-043**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	57			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/10 0831 Dup **Lab ID: K2108059-044**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	10			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5C-ASB Zone 3 7/10 0814 Dup **Lab ID: K2108059-045**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	0.86			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/9 1700 Dup **Lab ID: K2108059-046**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2400			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.5			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	24			1.0	ug/mL	NCASI HAPS-99.01
Propionaldehyde	1.0			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/9 1705 Dup **Lab ID: K2108059-047**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	430			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.5			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.6			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1A-Foul Cond. Inlet 7/9 1740 Dup **Lab ID: K2108059-048**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	78			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/9 1700 **Lab ID: K2108059-050**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2500			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.6			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	24			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/9 1705 **Lab ID: K2108059-051**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	440			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.7			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.8			1.0	ug/mL	NCASI HAPS-99.01

SAMPLE DETECTION SUMMARY

CLIENT ID: 2B-Foul Cond. Out. 7/9 1705 **Lab ID: K2108059-051**

Analyte	Results	Flag	MDL	MRL	Units	Method

CLIENT ID: 1A-ASB Inf. 7/9 1740 **Lab ID: K2108059-052**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	82			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5A-ASB Zone 1 7/9 1636 **Lab ID: K2108059-054**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	88			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/9 1703 **Lab ID: K2108059-055**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	7.3			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/9 1310 **Lab ID: K2108059-057**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2400			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.9			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	25			1.0	ug/mL	NCASI HAPS-99.01
Propionaldehyde	1.2			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/9 1315 **Lab ID: K2108059-058**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	440			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.7			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	4.2			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 1A-ASB Inf. 7/9 1340 **Lab ID: K2108059-059**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	60			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5A-ASB Zone 1 7/9 1248 **Lab ID: K2108059-061**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	82			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/9 1326 **Lab ID: K2108059-062**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	4.2			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 1A-ASB Inf. 7/9 0800 **Lab ID: K2108059-064**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	93			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/9 0800 **Lab ID: K2108059-066**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2300			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.5			1.0	ug/mL	NCASI HAPS-99.01

SAMPLE DETECTION SUMMARY

CLIENT ID: 2A-Foul Cond. Inlet 7/9 0800 **Lab ID: K2108059-066**

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetaldehyde	24			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2B-Foul Cond. Out. 7/9 0805 **Lab ID: K2108059-067**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	380			0.50	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	1.3			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	3.6			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 5A-ASB Zone 1 7/9 0845 **Lab ID: K2108059-068**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	70			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 5B-ASB Zone 2 7/9 0925 **Lab ID: K2108059-069**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	3.1			0.50	ug/mL	NCASI MeOH-94.03

CLIENT ID: 2A-Foul Cond. Inlet 7/7 Composite **Lab ID: K2108059-074**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2200			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.4			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	22			1.0	ug/mL	NCASI HAPS-99.01

CLIENT ID: 2A-Foul Cond. Inlet 7/8 Composite **Lab ID: K2108059-078**

Analyte	Results	Flag	MDL	MRL	Units	Method
Methanol	2300			5.0	ug/mL	NCASI MeOH-94.03
2-Butanone (MEK)	7.7			1.0	ug/mL	NCASI HAPS-99.01
Acetaldehyde	28			1.0	ug/mL	NCASI HAPS-99.01
Propionaldehyde	1.1			1.0	ug/mL	NCASI HAPS-99.01

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2108059-001	2A-Foul Cond. Inlet 7/11 1610	7/11/2021	1610
K2108059-002	2B-Foul Cond. Out. 7/11 1615	7/11/2021	1615
K2108059-003	1A-ASB Inf. 7/11 1640	7/11/2021	1640
K2108059-004	1B-ASB Eff. 7/11 1645	7/11/2021	1645
K2108059-005	5A-ASB Zone 1 7/11 1612	7/11/2021	1612
K2108059-006	5B-ASB Zone 2 7/11 1644	7/11/2021	1644
K2108059-007	5C-ASB Zone 3 7/11 1702	7/11/2021	1702
K2108059-008	2A-Foul Cond. Inlet 7/11 1220	7/11/2021	1220
K2108059-009	2B-Foul Cond. Out. 7/11 1225	7/11/2021	1225
K2108059-010	1A-ASB Inf. 7/11 1255	7/11/2021	1255
K2108059-011	1B-ASB Eff. 7/11 1300	7/11/2021	1300
K2108059-012	5A-ASB Zone 1 7/11 1225	7/11/2021	1225
K2108059-013	5B-ASB Zone 2 7/11 1249	7/11/2021	1249
K2108059-014	5C-ASB Zone 3 7/11 1309	7/11/2021	1309
K2108059-015	2A-Foul Cond. Inlet 7/11 0815	7/11/2021	0815
K2108059-016	2B-Foul Cond. Out. 7/11 0820	7/11/2021	0820
K2108059-017	1A-ASB Inf. 7/11 0850	7/11/2021	0850
K2108059-018	1B-ASB Eff. 7/11 0855	7/11/2021	0855
K2108059-019	5A-ASB Zone 1 7/11 0835	7/11/2021	0835
K2108059-020	5B-ASB Zone 2 7/11 0904	7/11/2021	0904
K2108059-021	5C-ASB Zone 3 7/11 0925	7/11/2021	0925
K2108059-022	2A-Foul Cond. Inlet 7/10 1605	7/10/2021	1605
K2108059-023	2B-Foul Cond. Out. 7/10 1610	7/10/2021	1610
K2108059-024	1A-ASB Inf. 7/10 1640	7/10/2021	1640
K2108059-025	1B-ASB Eff. 7/10 1645	7/10/2021	1645
K2108059-026	5A-ASB Zone 1 7/10 1700	7/10/2021	1700
K2108059-027	5B-ASB Zone 2 7/10 1632	7/10/2021	1632
K2108059-028	5C-ASB Zone 3 7/10 1615	7/10/2021	1615
K2108059-029	2A-Foul Cond. Inlet 7/10 1215	7/10/2021	1215
K2108059-030	2B-Foul Cond. Out. 7/10 1220	7/10/2021	1220
K2108059-031	1A-ASB Inf. 7/10 1304	7/10/2021	1304
K2108059-032	1B-ASB Eff. 7/10 1309	7/10/2021	1309
K2108059-033	5A-ASB Zone 1 7/10 1307	7/10/2021	1307
K2108059-034	5B-ASB Zone 2 7/10 1233	7/10/2021	1233
K2108059-035	5C-ASB Zone 3 7/10 1214	7/10/2021	1214
K2108059-036	2A-Foul Cond. Inlet 7/10 0820	7/10/2021	0820
K2108059-037	2B-Foul Cond. Out 7/10 0825	7/10/2021	0825
K2108059-038	1A-ASB Inf. 7/10 0850	7/10/2021	0850
K2108059-039	1B-ASB Eff. 7/10 0855	7/10/2021	0855
K2108059-040	5A-ASB Zone 1 7/10 0939	7/10/2021	0939
K2108059-041	5B-ASB Zone 2 7/10 0831	7/10/2021	0831
K2108059-042	5C-ASB Zone 3 7/10 0814	7/10/2021	0814

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2108059-043	5A-ASB Zone 1 7/10 0939 Dup	7/10/2021	0939
K2108059-044	5B-ASB Zone 2 7/10 0831 Dup	7/10/2021	0831
K2108059-045	5C-ASB Zone 3 7/10 0814 Dup	7/10/2021	0814
K2108059-046	2A-Foul Cond. Inlet 7/9 1700 Dup	7/9/2021	1700
K2108059-047	2B-Foul Cond. Out. 7/9 1705 Dup	7/9/2021	1705
K2108059-048	1A-Foul Cond. Inlet 7/9 1740 Dup	7/9/2021	1740
K2108059-049	1B-Foul Cond. Out. 7/9 1745 Dup	7/9/2021	1745
K2108059-050	2A-Foul Cond. Inlet 7/9 1700	7/9/2021	1700
K2108059-051	2B-Foul Cond. Out. 7/9 1705	7/9/2021	1705
K2108059-052	1A-ASB Inf. 7/9 1740	7/9/2021	1740
K2108059-053	1B-ASB Eff. 7/9 1745	7/9/2021	1745
K2108059-054	5A-ASB Zone 1 7/9 1636	7/9/2021	1636
K2108059-055	5B-ASB Zone 2 7/9 1703	7/9/2021	1703
K2108059-056	5C-ASB Zone 3 7/9 1719	7/9/2021	1719
K2108059-057	2A-Foul Cond. Inlet 7/9 1310	7/9/2021	1310
K2108059-058	2B-Foul Cond. Out. 7/9 1315	7/9/2021	1315
K2108059-059	1A-ASB Inf. 7/9 1340	7/9/2021	1340
K2108059-060	1B-ASB Eff. 7/9 1345	7/9/2021	1345
K2108059-061	5A-ASB Zone 1 7/9 1248	7/9/2021	1248
K2108059-062	5B-ASB Zone 2 7/9 1326	7/9/2021	1326
K2108059-063	5C-ASB Zone 3 7/9 1344	7/9/2021	1344
K2108059-064	1A-ASB Inf. 7/9 0800	7/9/2021	0800
K2108059-065	1B-ASB Eff. 7/9 0800	7/9/2021	0800
K2108059-066	2A-Foul Cond. Inlet 7/9 0800	7/9/2021	0800
K2108059-067	2B-Foul Cond. Out. 7/9 0805	7/9/2021	0805
K2108059-068	5A-ASB Zone 1 7/9 0845	7/9/2021	0845
K2108059-069	5B-ASB Zone 2 7/9 0925	7/9/2021	0925
K2108059-070	5C-ASB Zone 3 7/9 0953	7/9/2021	0953
K2108059-074	2A-Foul Cond. Inlet 7/7 Composite	7/7/2021	0800
K2108059-078	2A-Foul Cond. Inlet 7/8 Composite	7/8/2021	0800

116722

CHAIN OF CUSTODY
116722

001

SR# K2108059
COC Set____of____
COC#________

Page 1 of 1

1 of 11

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

roject Name DHEC Order
Project Number:
roject Manager Dan Mallett
ompany New Indy Container Board
ddress 5300 Cureton Ferry Rd / Catawba, SC 29704
hone # (803) 981-8010
email Dan.mallett@new-indycb.com
ampler Signature
Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	NCASI HAPS-99.01 / HAPS 14D	NCASI MeOH-94.03 / MeOH 30D	1	2	3	4	5	Remarks
1. 2A - Foul Cond. Inlet		7-11-21	1610	WW	1	x	x						
2. 2B - Foul Cond. Out.		7-11-21	1615	WW	1	x	x						
3. 1A - ASB Inf.		7-11-21	1640	WW	1	x	x						
4. 1B - ASB Eff		7-11-21	1645	WW	1	x	x						
5. 5A - ASB Zone 1		7-11-21	1612	WW	1	x	x						
6. 5B - ASB Zone 2		7-11-21	1644	WW	1	x	x						
7. 5C - ASB Zone 3		7-11-21	1702	WW	1	x	x						
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#________
Bill To:________

Turnaround Requirements

___ 24 hr. ✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garnen Harris Signature	Ref. Secure Area Signature	David E Hensley Signature	Ref Secure Area Signature	Rebecca L Aimes Signature	Ref. Secure Area Signature
Garness Harris Printed Name	Ref Secure Area Printed Name	David Hensley Printed Name	Ref Secure Area Printed Name	Rebecca Aimes Printed Name	Ref. Secure Area Printed Name
New Indy Firm	New Indy Firm	New Indy Firm	New Indy Firm	TRC Firm	New Indy Firm
7-11-21 1620 Date/Time	7-11-21 1620 Date/Time	7-11-21 1650 Date/Time	7-11-21 1650 Date/Time	7-11-21 1710 Date/Time	7-11-21 1710 Date/Time

Rec'd 7/13/21 1030

ALS

116722

CHAIN OF CUSTODY
116722

001

SR# K2-108059
COC Set____of____
COC#____________

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

2

oject Name DHEC Order
Project Number:
oject Manager Dan Mallett
ompany New Indy Container Board
ddress 5300 Cureton Fery Rd / Catawba, SC 29704
hone # (803) 981-8010
email Dan.mallett@new-indycb.com
ampler Signature
Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
2A - Foul Cond. Inlet		7-11-21.	1220	WW	1	x	x						
2B - Foul Cond. Out.		7-11-21	1225	WW	1	x	x						
1A - ASB Inf.		7-11-21	1255	WW	1	x	x						
1B - ASB Eff		7-11-21	1300	WW	1	x	x						
5A - ASB Zone 1		7-11-21	1225	WW	1	x	x						
5B - ASB Zone 2		7-11-21	1249	WW	1	x	x						
5C - ASB Zone 3		7-11-21	1309	WW	1	x	x						
0.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#____________
Bill To:____________

Turnaround Requirements

___ 24 hr.
✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garness Harris	Ref. Secure Area	David E Hensley	Ref Secure Area	Rebecca L. Aimes	Ref. Secure Area
ignature	Signature	Signature	Signature	Signature	Signature
Garness Harris	Ref Secure Area	David Hensley	Ref Secure Area	Rebecca Aimes	Ref. Secure Area
rinted Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy	TRC	New Indy
irm	Firm	Firm	Firm	Firm	Firm
7-11-21 1230	7-11-21 1230	7-11-21 1310	7-11-21 1310	7-11-21 1315	7-11-21 1315
ate/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Recd 7/13/21 1030

ALS

116722

CHAIN OF CUSTODY

116722

001

SR# K2108059

COC Set____of____

COC#__________

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name DHEC Order
Project Number:
Project Manager Dan Mallett
Company New Indy Container Board
Address 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone # (803) 981-8010
email Dan.mallett@new-indycb.com
Sampler Signature
Sampler Printed Name

3

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A - Foul Cond. In		7-11-21	0815	WW	1	x	x						
2. 2B - Foul Cond Out		7-11-21	0820	WW	1	x	x						
3. 1A - ASB Inf.		7-11-21	0850	WW	1	x	x						
4. 1B - ASB Eff.		7-11-21	0855	WW	1	x	x						
5. 5A - ASB Zone 1		7-11-21	0835	WW	1	x	x						
6. 5B - ASB Zone 2		7-11-21	0904	WW	1	x	x						
7. 5C - ASB Zone 3		7-11-21	0925	WW	1	x	x						
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

___ 24 hr.
[✓ 48 hr.]
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____ (Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garness Harris	Ref Secure Area	David E Hensley	Ref. Secure Area	Rebecca L. Aimes	Ref. Secure Area
Signature	Signature	Signature	Signature	Signature	Signature
Garness Harris	Ref Secure Area	David Hensley	Ref. Secure Area	Rebecca Aimes	Ref. Secure Area
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy	TRC	New Indy
Firm	Firm	Firm	Firm	Firm	Firm
7-11-21 825	7-11-21 825	7-11-21 0900	7-11-21 0900	7-11-21 0930	7-11-21 0930
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Rec'd: 7/13/21 1030

116722

CHAIN OF CUSTODY

116722

001

SR# K2108059

COC Set ____ of ____

COC# ____________

Page 1 of 1

4

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name DHEC Order
Project Number:
Project Manager Dan Mallett
Company New Indy Conteiner Board
Address 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone # (803) 981-8010
email Dan.mallett@new-indycb.com
Sampler Signature
Sampler Printed Name

	CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1.	2A - Foul Cond. In		7-10-21	1605	WW	1	x	x						
2.	2B - Foul Cond Out		7-10-21	1610	WW	1	x	x						
3.	1A - ASB Inf		7-10-21	1648	WW	1	x	x						
4.	1B - ASB Eff		7-10-21	1645	WW	1	x	x						
5.	5A - ASB Zone 1		7-10-21	1700	WW	1	x	x						
6.	5B - ASB Zone 2		7-10-21	1632	WW	1	x	x						
7.	5C - ASB Zone 3		7-10-21	1615	WW	1	x	x						
8.														
9.														
10.														

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- ___ V. EDD

Invoice Information

P.O.#____________
Bill To:____________

Turnaround Requirements

___ 24 hr.
___ 5 Day
___ Standard
✓ 48 hr.

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____ (Circle One)

Special Instructions/Comments:

* Sample Date and Time crucial for sample identification *

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Garness Harris	Ref. Secure Area	David E Hensley	Ref. Secure Area	Rebecca L. Arnes	Ref. Secure Area
Printed Name	Garness Harris	Ref. Secure Area	David Hensley	Ref. Secure Area	Rebecca Arenes	Ref. Secure Area
Firm	New Indy	New Indy	New Indy	New Indy	TRC	New Indy
Date/Time	7-10-21 1620	7-10-21 1620	7-10-21 1650	7-10-21 1650	7-10-21 1710	7-10-21 1710

Rec'd: 7/13/21 1030

ALS

116722

CHAIN OF CUSTODY

116722

001

SR# K2108059

COC Set ____ of ____

COC# ____________

Page 1 of 1

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

5

Project Name: DHEC Order
Project Number:
Project Manager: Dan Mallett
Company: New Indy Container Board
Address: 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone #: (803) 981-8010
email: Dan.mallett@new-indycb.com
Sampler Signature:
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A - Foul Cond In		7-10-21	1215	WW	1	x	x						
2. 2B - Foul Cond Out		7-10-21	1220	WW	1	x	x						
3. 1A - ASB Inf.		7-10-21	1304	WW	1	x	x						
4. 1B - ASB Eff		7-10-21	1309	WW	1	x	x						
5. 5A - ASB Zone 1		7-10-21	1307	WW	1	x	x						
6. 5B - ASB Zone 2		7-10-21	1233	WW	1	x	x						
7. 5C - ASB Zone 3		7-10-21	1214	WW	1	x	x						
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# ____________

Bill To: ____________

Turnaround Requirements

___ 24 hr.
✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____ (Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garness Harris	Ref Secure Area	David E Hensley	Ref. Secure Area	Rebecca L Aimes	Ref. Secure Area
Signature	Signature	Signature	Signature	Signature	Signature
Gainess Harris	Ref. Secure Area	David Hensley	Ref. Secure Area	Rebecca Aimes	Ref. Secure Area
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy	TRC	New Indy
Firm	Firm	Firm	Firm	Firm	Firm
7-10-21 1225	7-10-21 1225	7-10-21 1315	7-10-21 1315	7-10-21 1315	7-10-21 1315
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Rec'd: 7/13/21 1030

ALS

116722

CHAIN OF CUSTODY
116722

001

SR# K2108059

COC Set____of____

COC#____________

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Page 1 of 1

6

Project Name DHEC Order
Project Number:
Project Manager Dan Mallett
Company New Indy Container Board
Address 5300 Cureton Ferry Rd / Catawba, SC 29704
Phone # (803) 981-8010
email Dan.mallett@new-indycb.com
Sampler Signature
Sampler Printed Name

	CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1.	2A - Foul Cond. In		7-10-21	0820	WW	1	x	x						
2.	2B - Foul Cond Out		7-10-21	0825	WW	1	x	x						
3.	1A - ASB Inf.		7-10-21	0850	WW	1	x	x						
4.	1B - ASB Eff		7-10-21	0855	WW	1	x	x						
5.	5A - ASB Zone 1		7-10-21	0939	WW	1	x	x						
6.	5B - ASB Zone 2		7-10-21	0831	WW	1	x	x						
7.	5C - ASB Zone 3		7-10-21	0814	WW	1	x	x						
8.	5A - ASB Zone 1		7-10-21	0939	WW	1	x	x						QA Duplicate Samples
9.	5B - ASB Zone 2		7-10-21	0831	WW	1	x	x						
10.	5C - ASB Zone 3		7-10-21	0814	WW	1	x	x						

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#____________

Bill To:____________

Turnaround Requirements

____ 24 hr. ✓ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____ (Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Garness Harris	Ref Secure Area	David E Hensley	Ref. Secure Area	Rebecca L Armes	Ref Secure Area
Signature	Signature	Signature	Signature	Signature	Signature
Garness Harris	Ref. Secure Area	David Hensley	Ref. Secure Area	Rebecca Armes	Ref. Secure Area
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy	TRC	New Indy
Firm	Firm	Firm	Firm	Firm	Firm
7-10-21 0830	7-10-21 0830	7-10-21 0900	7-10-21 0900	7-10-21 0945	7-10-21 0945
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Rec'd: 7/13/21 1030

116722

CHAIN OF CUSTODY

116722

001

SR# K2108059

COC Set____of____

COC#__________

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Page 1 of 1

7

Project Name DHEC Order

Project Number:

Project Manager Dan Mallett

Company New Indy Container Board

Address 5300 Cureton Ferry Rd / Catawba, SC 29704

Phone # (803) 981-8010

email Dan.mallett@new-indycb.com

Sampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	NCASI HAPS-99.01 / HAPS 14D	NCASI MeOH-94.03 / MeOH 30D	1	2	3	4	5	Remarks
1. 2A Foul Cond In		7-9-21	1700	WW	1	x	x						QA Duplicate
2. 2B Foul Cond Out		7-9-21	1705	WW	1	x	x						Samples
3. 1A Foul Cond In		7-9-21	1740	WW	1	x	x						↓
4. 1B Foul Cond Out		7-9-21	1745	WW	1	x	x						
5.													
6.													
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#________

Bill To:________

Turnaround Requirements

___ 24 hr. ☑ 48 hr.

___ 5 Day

___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____ (Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
James Harris Signature	Ref. Secure Area Signature	David E Hensley Signature	Ref. Secure Area Signature	Signature	Signature
James Harris Printed Name	Ref Secure Area Printed Name	David Hensley Printed Name	Ref Secure Area Printed Name	Printed Name	Printed Name
New Indy Firm	New Indy Firm	New Indy Firm	New Indy Firm	Firm	Firm
7-9-21 1710 Date/Time	7-9-21 1710 Date/Time	7-9-21 1750 Date/Time	7-9-21 1750 Date/Time	Date/Time	Date/Time

Rec'd: 7/13/21 1030

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CHAIN OF COUSTODY

116722

001

SR# K2108059

COC Set____of____

COC#________

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Page 1 of 1

8

roject Name DHEC Order

Project Number:

roject Manager Dan Mallett

ompany New Indy Container Board

ddress 5300 Cureton Ferry Rd / Catawba, SC 29704

hone # (803) 981-8010

email Dan.mallett@new-indycb.com

ampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2A Foul Cond. In		7-9-21	1700	WW	1	x	x						
2. 2B Foul Cond. Out		7-9-21	1705	WW	1	x	x						
3. 1A - ASB Inf.		7-9-21	1740	WW	1	x	x						
4. 1B - ASB Eff.		7-9-21	1745	WW	1	x	x						
5. 5A - ASB Zone 1		7-9-21	1636	WW	1	x	x						
6. 5B - ASB Zone 2		7-9-21	1703	WW	1	x	x						
7. 5C - ASB Zone 3		7-9-21	1719	WW	1	x	x						
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#________

Bill To:________

Turnaround Requirements

___ 24 hr.
✓ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
	Ref Secure Area		Ref. Secure Area	Rebecca L. Armes	Ref Secure Area
Signature	Signature	Signature	Signature	Signature	Signature
Garness Harris	Ref Secure Area	David Hensley	Ref Secure Area	Rebecca Armes	Ref Secure Area
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy	TRC	New Indy
Firm	Firm	Firm	Firm	Firm	Firm
7-9-21 1710	7-9-21 1710	7-9-21 1750	7-9-21 1750	7-9-21 1725	7-9-21 1725
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Rec'd: 7/13/21 1030

116722

CHAIN OF COUNTY

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SR# K2108059

COC Set____of____

COC#________

Page 1 of 1

9

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Project Name DHEC Order

Project Number:

Project Manager Dan Mallett

Company New Indy Container Board

Address 5300 Cureton Ferry Rd / Catawba, SC 29704

Phone # (803) 981-8010

email Dan.mallett@new-indycb.com

Sampler Signature

Sampler Printed Name

	CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1.	2A Foul Cond In		7-9-21	1310	WW	1	x	x						
2.	2B Foul Cond Out		7-9-21	1315	WW	1	x	x						
3.	1A - ASB Inf		7-9-21	1340	WW	1	x	x						
4.	1B - ASB Eff		7-9-21	1345	WW	1	x	x						
5.	5A - ASB Zone 1		7-9-21	1248	WW	1	x	x						
6.	5B - ASB Zone 2		7-9-21	1326	WW	1	x	x						
7.	5C - ASB Zone 3		7-9-21	1344	WW	1	x	x						
8.														
9.														
10.														

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

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___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#________

Bill To:________

Turnaround Requirements

____ 24 hr. ✓ 48 hr.

____ 5 Day

____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
	Ref Secure Area	David E Hensley	Ref Secure Area	Rebecca L. Armes	Ref. Secure Area
Signature	Signature	Signature	Signature	Signature	Signature
Gainess Harris	Ref Secure Area	David Hensley	Ref Secure Area	Rebecca Armes	Ref Secure Area
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy	TRC	New Indy
Firm	Firm	Firm	Firm	Firm	Firm
7-9-21 1320	7-9-21 1320	7-9-21 1350	7-9-21 1350	7-9-21 1350	7-9-21 1350
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Rcd: 7/13/21 1030

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CHAIN OF CUSTODY

116722

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SR# K2108059

COC Set____of____

COC#__________

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Page 1 of 1

10

Project Name DHEC Order

Project Number:

Project Manager Dan Mallett

Company New Indy Container Board

Address 5300 Cureton Ferry Rd / Catawba, SC 29704

Phone # (803) 981-8010

email Dan.mallett@new-indycb.com

Sampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 1-A - ASB Inf.		7-9-21	0800	WW	1	X	X						
2. 1-B - ASB Eff.		7-9-21	0800	WW	1	X	X						
3. 2-A - Foul Cond. Inlet		7-9-21	0800	WW	1	X	X						
4. 2-B - Foul Cond. Outlet		7-9-21	0805	WW	1	X	X						
5. 5-A - ASB Zone 1		7-9-21	0845	WW	1	X	X						
6. 5B - ASB Zone 2		7-9-21	0925	WW	1	X	X						
7. 5C - ASB Zone 3		7-9-21	0953	WW	1	X	X						
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

____ 24 hr.
✓ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

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Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____ (Circle One)

* Sample Date and Time crucial for sample identification *

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
David E Hensley	Ref. Secure Area	Garness Harris	Ref Secure Area	Rebecca L. Aimes	Ref Secure Area
Signature	Signature	Signature	Signature	Signature	Signature
David Hensley	Ref. Secure Area	Garness Harris	Ref Secure Area	Rebecca Aimes	Ref. Secure Area
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy	TRC	New Indy
Firm	Firm	Firm	Firm	Firm	Firm
7-9-21 810	7-9-21 810	7-9-21 810	7-9-21 810	7-9-21 1000	7-9-21 1000
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Rec'd: 7/13/21 1030

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CHAIN OF CUSTODY

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SR# K2108059

COC Set____of____

COC#________

Page 1 of 1

11

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

roject Name DHEC Order

Project Number:

roject Manager Dan Mallett

ompany New Indy Container Board

ddress 5300 Cureton Ferry Rd / Catawba, SC 29704

hone # (803) 981-8010

email Dan.mallett@new-indycb.com

ampler Signature

Sampler Printed Name

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D NCASI HAPS-99.01 / HAPS	30D NCASI MeOH-94.03 / MeOH	1	2	3	4	5	Remarks
1. 2-A Foul Cond Inlet		7-7-21	0800	WW	1	X	X						Composite
2. 2-A Foul Cond Inlet		7-7-21	1200	WW	1	X	X						before
3. 2-A Foul Cond. Inlet		7-7-21	1600	WW	1	X	X						Analysis
4. 2-A Foul Cond. Inlet		7-8-21	0800	WW	1	X	X						Composite
5. 2-A Foul Cond. Inlet		7-8-21	1200	WW	1	X	X						before
6. 2-A Foul Cond. Inlet		7-8-21	1600	WW	1	X	X						Analysis
7.													
8.													
9.													
10.													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#________

Bill To:________

Turnaround Requirements

____ 24 hr.

✓ 48 hr.

____ 5 Day

____ Standard

Requested Report Date

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Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Special Instructions/Comments:

* Sample Date and Time crucial for sample identification *

Relinquished By:	**Received By:**	**Relinquished By:**	**Received By:**	**Relinquished By:**	**Received By:**
Garness Harris	Ref. Secure Area	Garness Harris	Ref. Secure Area		
Signature	Signature	Signature	Signature	Signature	Signature
Garness Harris	Ref. Secure Area	Garness Harris	Ref. Secure Area		7/13/21 1030
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
New Indy	New Indy	New Indy	New Indy		ALS
Firm	Firm	Firm	Firm	Firm	Firm
7-7-21 0810	7-7-21 0810	7-8-21 0810	7-8-21 0810		7/13/21 1030
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
7-7-21 1205	7-7-21 1205	7-8-21 1205	7-8-21 1205		
7-7-21 1605	7-7-21 1605	7-8-21 1605	7-8-21 1605		

PM SW

Cooler Receipt and Preservation Form

Client New Indy Service Request **K21** C8059

Received: 7/13/21 Opened: 7/13/21 By: BR/CG Unloaded: 7/13/21 By: BR/CG

1. Samples were received via? *USPS* *Fed Ex* [✓ *UPS*] *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) [✓ *Cooler*] *Box* *Envelope* *Other* ______ *NA*
3. Were custody seals on coolers? NA [✓ Y] N If yes, how many and where? Front, Back

   If present, were custody seals intact? [✓ Y] N If present, were they signed and dated? [✓ Y] N
4. Was a Temperature Blank present in cooler? NA [✓ Y] N If yes, notate the temperature in the appropriate column below:

   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA [✓ Y] N

   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. [✓ NA] Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / [✓ NA]	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
3.7	-	IR07				1Z221430 0192886294	

6. Packing material: *Inserts* *Baggies* [✓ *Bubble Wrap*] *Gel Packs* [✓ *Wet Ice*] *Dry Ice* *Sleeves* ______
7. Were custody papers properly filled out (ink, signed, etc.)? NA [✓ Y] N
8. Were samples received in good condition (unbroken) NA [✓ Y] N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA [✓ Y] N
10. Did all sample labels and tags agree with custody papers? NA [✓ Y] N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA [✓ Y] N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* [✓ NA] Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA [✓ Y] N
14. Was C12/Res negative? [✓ NA] Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

RUSH

Notes, Discrepancies, Resolutions: ______

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
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Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 2A-Foul Cond. Inlet 7/11 1610
Lab Code: K2108059-001
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2B-Foul Cond. Out. 7/11 1615
Lab Code: K2108059-002
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1A-ASB Inf. 7/11 1640
Lab Code: K2108059-003
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1B-ASB Eff. 7/11 1645
Lab Code: K2108059-004
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order/

Sample Name: 5A-ASB Zone 1 7/11 1612
Date Collected: 07/11/21
Lab Code: K2108059-005
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5B-ASB Zone 2 7/11 1644
Date Collected: 07/11/21
Lab Code: K2108059-006
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5C-ASB Zone 3 7/11 1702
Date Collected: 07/11/21
Lab Code: K2108059-007
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/11 1220
Date Collected: 07/11/21
Lab Code: K2108059-008
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order/

Sample Name: 2B-Foul Cond. Out. 7/11 1225
Date Collected: 07/11/21
Lab Code: K2108059-009
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1A-ASB Inf. 7/11 1255
Date Collected: 07/11/21
Lab Code: K2108059-010
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1B-ASB Eff. 7/11 1300
Date Collected: 07/11/21
Lab Code: K2108059-011
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5A-ASB Zone 1 7/11 1225
Date Collected: 07/11/21
Lab Code: K2108059-012
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 5B-ASB Zone 2 7/11 1249
Lab Code: K2108059-013
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5C-ASB Zone 3 7/11 1309
Lab Code: K2108059-014
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/11 0815
Lab Code: K2108059-015
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2B-Foul Cond. Out. 7/11 0820
Lab Code: K2108059-016
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 1A-ASB Inf. 7/11 0850
Lab Code: K2108059-017
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1B-ASB Eff. 7/11 0855
Lab Code: K2108059-018
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5A-ASB Zone 1 7/11 0835
Lab Code: K2108059-019
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5B-ASB Zone 2 7/11 0904
Lab Code: K2108059-020
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 5C-ASB Zone 3 7/11 0925
Lab Code: K2108059-021
Sample Matrix: Wastewater
Date Collected: 07/11/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/10 1605
Lab Code: K2108059-022
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2B-Foul Cond. Out. 7/10 1610
Lab Code: K2108059-023
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1A-ASB Inf. 7/10 1640
Lab Code: K2108059-024
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

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Analyst Summary report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order/		

Sample Name:	1B-ASB Eff. 7/10 1645	**Date Collected:**	07/10/21
Lab Code:	K2108059-025	**Date Received:**	07/13/21
Sample Matrix:	Wastewater		

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name:	5A-ASB Zone 1 7/10 1700	**Date Collected:**	07/10/21
Lab Code:	K2108059-026	**Date Received:**	07/13/21
Sample Matrix:	Wastewater		

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name:	5B-ASB Zone 2 7/10 1632	**Date Collected:**	07/10/21
Lab Code:	K2108059-027	**Date Received:**	07/13/21
Sample Matrix:	Wastewater		

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name:	5C-ASB Zone 3 7/10 1615	**Date Collected:**	07/10/21
Lab Code:	K2108059-028	**Date Received:**	07/13/21
Sample Matrix:	Wastewater		

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Analyst Summary report

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order/

Sample Name: 2A-Foul Cond. Inlet 7/10 1215
Date Collected: 07/10/21
Lab Code: K2108059-029
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2B-Foul Cond. Out. 7/10 1220
Date Collected: 07/10/21
Lab Code: K2108059-030
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1A-ASB Inf. 7/10 1304
Date Collected: 07/10/21
Lab Code: K2108059-031
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1B-ASB Eff. 7/10 1309
Date Collected: 07/10/21
Lab Code: K2108059-032
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 5A-ASB Zone 1 7/10 1307
Lab Code: K2108059-033
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5B-ASB Zone 2 7/10 1233
Lab Code: K2108059-034
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5C-ASB Zone 3 7/10 1214
Lab Code: K2108059-035
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/10 0820
Lab Code: K2108059-036
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 2B-Foul Cond. Out 7/10 0825
Lab Code: K2108059-037
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1A-ASB Inf. 7/10 0850
Lab Code: K2108059-038
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1B-ASB Eff. 7/10 0855
Lab Code: K2108059-039
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5A-ASB Zone 1 7/10 0939
Lab Code: K2108059-040
Sample Matrix: Wastewater
Date Collected: 07/10/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard **Service Request:** K2108059
Project: DHEC Order/

Sample Name: 5B-ASB Zone 2 7/10 0831 **Date Collected:** 07/10/21
Lab Code: K2108059-041 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5B-ASB Zone 2 7/10 0831 **Date Collected:** 07/10/21
Lab Code: K2108059-041.R01 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5C-ASB Zone 3 7/10 0814 **Date Collected:** 07/10/21
Lab Code: K2108059-042 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5A-ASB Zone 1 7/10 0939 Dup **Date Collected:** 07/10/21
Lab Code: K2108059-043 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard **Service Request:** K2108059
Project: DHEC Order/

Sample Name: 5B-ASB Zone 2 7/10 0831 Dup **Date Collected:** 07/10/21
Lab Code: K2108059-044 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5C-ASB Zone 3 7/10 0814 Dup **Date Collected:** 07/10/21
Lab Code: K2108059-045 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/9 1700 Dup **Date Collected:** 07/9/21
Lab Code: K2108059-046 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2B-Foul Cond. Out. 7/9 1705 Dup **Date Collected:** 07/9/21
Lab Code: K2108059-047 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 1A-Foul Cond. Inlet 7/9 1740 Dup
Lab Code: K2108059-048
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1B-Foul Cond. Out. 7/9 1745 Dup
Lab Code: K2108059-049
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/9 1700
Lab Code: K2108059-050
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2B-Foul Cond. Out. 7/9 1705
Lab Code: K2108059-051
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 1A-ASB Inf. 7/9 1740
Lab Code: K2108059-052
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1B-ASB Eff. 7/9 1745
Lab Code: K2108059-053
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5A-ASB Zone 1 7/9 1636
Lab Code: K2108059-054
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5B-ASB Zone 2 7/9 1703
Lab Code: K2108059-055
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 5C-ASB Zone 3 7/9 1719
Lab Code: K2108059-056
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/9 1310
Lab Code: K2108059-057
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2B-Foul Cond. Out. 7/9 1315
Lab Code: K2108059-058
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1A-ASB Inf. 7/9 1340
Lab Code: K2108059-059
Sample Matrix: Wastewater
Date Collected: 07/9/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard **Service Request:** K2108059
Project: DHEC Order/

Sample Name: 1B-ASB Eff. 7/9 1345 **Date Collected:** 07/9/21
Lab Code: K2108059-060 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5A-ASB Zone 1 7/9 1248 **Date Collected:** 07/9/21
Lab Code: K2108059-061 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5B-ASB Zone 2 7/9 1326 **Date Collected:** 07/9/21
Lab Code: K2108059-062 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5C-ASB Zone 3 7/9 1344 **Date Collected:** 07/9/21
Lab Code: K2108059-063 **Date Received:** 07/13/21
Sample Matrix: Wastewater

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order/

Sample Name: 1A-ASB Inf. 7/9 0800
Date Collected: 07/9/21
Lab Code: K2108059-064
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 1B-ASB Eff. 7/9 0800
Date Collected: 07/9/21
Lab Code: K2108059-065
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/9 0800
Date Collected: 07/9/21
Lab Code: K2108059-066
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2B-Foul Cond. Out. 7/9 0805
Date Collected: 07/9/21
Lab Code: K2108059-067
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order/

Sample Name: 5A-ASB Zone 1 7/9 0845
Date Collected: 07/9/21
Lab Code: K2108059-068
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5B-ASB Zone 2 7/9 0925
Date Collected: 07/9/21
Lab Code: K2108059-069
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 5C-ASB Zone 3 7/9 0953
Date Collected: 07/9/21
Lab Code: K2108059-070
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Name: 2A-Foul Cond. Inlet 7/7 Composite
Date Collected: 07/7/21
Lab Code: K2108059-074
Date Received: 07/13/21
Sample Matrix: Wastewater

Analysis Method	**Extracted/Digested By**	**Analyzed By**
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Analyst Summary report

Client: New-Indy Containerboard
Project: DHEC Order/
Service Request: K2108059

Sample Name: 2A-Foul Cond. Inlet 7/8 Composite
Lab Code: K2108059-078
Sample Matrix: Wastewater
Date Collected: 07/8/21
Date Received: 07/13/21

Analysis Method	Extracted/Digested By	Analyzed By
NCASI HAPS-99.01	TPOTTSCHMIDT	TPOTTSCHMIDT
NCASI MeOH-94.03	TPOTTSCHMIDT	TPOTTSCHMIDT

Sample Results

ALS Environmental—Kelso Laboratory
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Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2108059
Project:	DHEC Order		**Date Collected:**	07/11/21 16:10
Sample Matrix:	Wastewater		**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/11 1610		**Units:**	ug/mL
Lab Code:	K2108059-001		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**4.5**		1.0	1	07/16/21 16:54	7/14/21	
Acetaldehyde	**18**		1.0	1	07/16/21 16:54	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/16/21 16:54	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 16:15
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/11 1615	**Units:**	ug/mL
Lab Code:	K2108059-002	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 01:59	7/14/21	
Acetaldehyde	**2.5**	1.0	1	07/15/21 01:59	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 01:59	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 16:40
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/11 1640	**Units:**	ug/mL
Lab Code:	K2108059-003	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 02:19	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 02:19	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 02:19	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/11/21 16:45
Date Received: 07/13/21 10:30

Sample Name: 1B-ASB Eff. 7/11 1645
Lab Code: K2108059-004

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 03:20	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 03:20	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 03:20	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 16:12
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/11 1612	**Units:**	ug/mL
Lab Code:	K2108059-005	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 03:40	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 03:40	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 03:40	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 16:44
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/11 1644	**Units:**	ug/mL
Lab Code:	K2108059-006	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 04:00	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 04:00	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 04:00	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 17:02
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/11 1702	**Units:**	ug/mL
Lab Code:	K2108059-007	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 04:20	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 04:20	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 04:20	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 12:20
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/11 1220	**Units:**	ug/mL
Lab Code:	K2108059-008	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	10	10	07/15/21 04:40	7/14/21	
Acetaldehyde	**29**	10	10	07/15/21 04:40	7/14/21	
Propionaldehyde	ND U	10	10	07/15/21 04:40	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 12:25
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/11 1225	**Units:**	ug/mL
Lab Code:	K2108059-009	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	07/15/21 05:00	7/14/21	
Acetaldehyde	**2.8**		1.0	1	07/15/21 05:00	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/15/21 05:00	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 12:55
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/11 1255	**Units:**	ug/mL
Lab Code:	K2108059-010	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 05:20	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 05:20	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 05:20	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 13:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/11 1300	**Units:**	ug/mL
Lab Code:	K2108059-011	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 05:41	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 05:41	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 05:41	7/14/21	

Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2108059
Project:	DHEC Order		**Date Collected:**	07/11/21 12:25
Sample Matrix:	Wastewater		**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/11 1225		**Units:**	ug/mL
Lab Code:	K2108059-012		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 06:01	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 06:01	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 06:01	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 12:49
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/11 1249	**Units:**	ug/mL
Lab Code:	K2108059-013	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 06:58	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 06:58	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 06:58	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 13:09
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/11 1309	**Units:**	ug/mL
Lab Code:	K2108059-014	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 07:17	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 07:17	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 07:17	7/14/21	

Client:	New-Indy Containerboard		**Service Request:**	K2108059
Project:	DHEC Order		**Date Collected:**	07/11/21 08:15
Sample Matrix:	Wastewater		**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/11 0815		**Units:**	ug/mL
Lab Code:	K2108059-015		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	10	10	07/15/21 07:36	7/14/21	
Acetaldehyde	**28**		10	10	07/15/21 07:36	7/14/21	
Propionaldehyde	ND	U	10	10	07/15/21 07:36	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 08:20
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/11 0820	**Units:**	ug/mL
Lab Code:	K2108059-016	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.0**	1.0	1	07/15/21 07:56	7/14/21	
Acetaldehyde	**3.2**	1.0	1	07/15/21 07:56	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 07:56	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/11/21 08:50
Date Received: 07/13/21 10:30

Sample Name: 1A-ASB Inf. 7/11 0850
Lab Code: K2108059-017

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 08:15	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 08:15	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 08:15	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 08:55
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/11 0855	**Units:**	ug/mL
Lab Code:	K2108059-018	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	07/15/21 08:35	7/14/21	
Acetaldehyde	ND	U	1.0	1	07/15/21 08:35	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/15/21 08:35	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order
Date Collected: 07/11/21 08:35
Sample Matrix: Wastewater
Date Received: 07/13/21 10:30

Sample Name: 5A-ASB Zone 1 7/11 0835
Units: ug/mL
Lab Code: K2108059-019
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 08:54	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 08:54	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 08:54	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 09:04
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/11 0904	**Units:**	ug/mL
Lab Code:	K2108059-020	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 09:13	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 09:13	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 09:13	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 09:25
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/11 0925	**Units:**	ug/mL
Lab Code:	K2108059-021	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 09:33	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 09:33	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 09:33	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:05
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/10 1605	**Units:**	ug/mL
Lab Code:	K2108059-022	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**5.9**	1.0	1	07/16/21 17:52	7/14/21	
Acetaldehyde	**22**	1.0	1	07/16/21 17:52	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 17:52	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:10
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/10 1610	**Units:**	ug/mL
Lab Code:	K2108059-023	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.2**		1.0	1	07/15/21 10:52	7/14/21	
Acetaldehyde	**3.6**		1.0	1	07/15/21 10:52	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/15/21 10:52	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:40
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/10 1640	**Units:**	ug/mL
Lab Code:	K2108059-024	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 12:09	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 12:09	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 12:09	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:45
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/10 1645	**Units:**	ug/mL
Lab Code:	K2108059-025	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 12:28	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 12:28	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 12:28	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 17:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/10 1700	**Units:**	ug/mL
Lab Code:	K2108059-026	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 12:48	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 12:48	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 12:48	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 16:32
Date Received: 07/13/21 10:30

Sample Name: 5B-ASB Zone 2 7/10 1632
Lab Code: K2108059-027

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 13:15	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 13:15	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 13:15	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:15
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/10 1615	**Units:**	ug/mL
Lab Code:	K2108059-028	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 13:35	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 13:35	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 13:35	7/14/21	

Client:	New-Indy Containerboard		**Service Request:**	K2108059
Project:	DHEC Order		**Date Collected:**	07/10/21 12:15
Sample Matrix:	Wastewater		**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/10 1215		**Units:**	ug/mL
Lab Code:	K2108059-029		**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**6.3**		1.0	1	07/16/21 18:12	7/14/21	
Acetaldehyde	**23**		1.0	1	07/16/21 18:12	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/16/21 18:12	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 12:20
Date Received: 07/13/21 10:30

Sample Name: 2B-Foul Cond. Out. 7/10 1220
Lab Code: K2108059-030

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.3**	1.0	1	07/15/21 14:14	7/14/21	
Acetaldehyde	**3.2**	1.0	1	07/15/21 14:14	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 14:14	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 13:04
Date Received: 07/13/21 10:30

Sample Name: 1A-ASB Inf. 7/10 1304
Lab Code: K2108059-031

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 14:34	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 14:34	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 14:34	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 13:09
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/10 1309	**Units:**	ug/mL
Lab Code:	K2108059-032	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 14:54	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 14:54	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 14:54	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 13:07
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/10 1307	**Units:**	ug/mL
Lab Code:	K2108059-033	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 15:14	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 15:14	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 15:14	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 12:33
Date Received: 07/13/21 10:30

Sample Name: 5B-ASB Zone 2 7/10 1233
Lab Code: K2108059-034

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 15:34	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 15:34	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 15:34	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 12:14
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/10 1214	**Units:**	ug/mL
Lab Code:	K2108059-035	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 15:55	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 15:55	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 15:55	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:20
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/10 0820	**Units:**	ug/mL
Lab Code:	K2108059-036	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	10	10	07/15/21 16:15	7/14/21	
Acetaldehyde	**31**		10	10	07/15/21 16:15	7/14/21	
Propionaldehyde	ND	U	10	10	07/15/21 16:15	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:25
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out 7/10 0825	**Units:**	ug/mL
Lab Code:	K2108059-037	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.4**	1.0	1	07/15/21 16:34	7/14/21	
Acetaldehyde	**3.8**	1.0	1	07/15/21 16:34	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 16:34	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 08:50
Date Received: 07/13/21 10:30

Sample Name: 1A-ASB Inf. 7/10 0850
Lab Code: K2108059-038

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 16:54	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 16:54	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 16:54	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:55
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/10 0855	**Units:**	ug/mL
Lab Code:	K2108059-039	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 17:13	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 17:13	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 17:13	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 09:39
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/10 0939	**Units:**	ug/mL
Lab Code:	K2108059-040	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 17:32	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 17:32	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 17:32	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:31
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/10 0831	**Units:**	ug/mL
Lab Code:	K2108059-041	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 20:46	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 20:46	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 20:46	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:14
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/10 0814	**Units:**	ug/mL
Lab Code:	K2108059-042	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 18:49	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 18:49	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 18:49	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 09:39
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/10 0939 Dup	**Units:**	ug/mL
Lab Code:	K2108059-043	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 19:09	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 19:09	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 19:09	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:31
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/10 0831 Dup	**Units:**	ug/mL
Lab Code:	K2108059-044	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 19:28	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 19:28	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 19:28	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:14
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/10 0814 Dup	**Units:**	ug/mL
Lab Code:	K2108059-045	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 19:48	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 19:48	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 19:48	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/9 1700 Dup	**Units:**	ug/mL
Lab Code:	K2108059-046	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.5**	1.0	1	07/16/21 18:50	7/14/21	
Acetaldehyde	**24**	1.0	1	07/16/21 18:50	7/14/21	
Propionaldehyde	**1.0**	1.0	1	07/16/21 18:50	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:05
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/9 1705 Dup	**Units:**	ug/mL
Lab Code:	K2108059-047	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.5**		1.0	1	07/15/21 20:26	7/14/21	
Acetaldehyde	**3.6**		1.0	1	07/15/21 20:26	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/15/21 20:26	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:40
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-Foul Cond. Inlet 7/9 1740 Dup	**Units:**	ug/mL
Lab Code:	K2108059-048	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 20:45	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 20:45	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 20:45	7/14/21	

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Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 17:45
Date Received: 07/13/21 10:30

Sample Name: 1B-Foul Cond. Out. 7/9 1745 Dup
Lab Code: K2108059-049

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 21:04	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 21:04	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 21:04	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 17:00
Date Received: 07/13/21 10:30

Sample Name: 2A-Foul Cond. Inlet 7/9 1700
Lab Code: K2108059-050

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.6**		1.0	1	07/16/21 19:10	7/14/21	
Acetaldehyde	**24**		1.0	1	07/16/21 19:10	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/16/21 19:10	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:05
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/9 1705	**Units:**	ug/mL
Lab Code:	K2108059-051	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.7**	1.0	1	07/15/21 21:43	7/14/21	
Acetaldehyde	**3.8**	1.0	1	07/15/21 21:43	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 21:43	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order
Date Collected: 07/09/21 17:40
Sample Matrix: Wastewater
Date Received: 07/13/21 10:30

Sample Name: 1A-ASB Inf. 7/9 1740
Units: ug/mL
Lab Code: K2108059-052
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND	U	1.0	1	07/15/21 22:02	7/14/21	
Acetaldehyde	ND	U	1.0	1	07/15/21 22:02	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/15/21 22:02	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:45
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/9 1745	**Units:**	ug/mL
Lab Code:	K2108059-053	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 22:21	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 22:21	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 22:21	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 16:36
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/9 1636	**Units:**	ug/mL
Lab Code:	K2108059-054	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/15/21 22:40	7/14/21	
Acetaldehyde	ND U	1.0	1	07/15/21 22:40	7/14/21	
Propionaldehyde	ND U	1.0	1	07/15/21 22:40	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:03
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/9 1703	**Units:**	ug/mL
Lab Code:	K2108059-055	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 10:12	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 10:12	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 10:12	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 17:19
Date Received: 07/13/21 10:30

Sample Name: 5C-ASB Zone 3 7/9 1719
Lab Code: K2108059-056

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 10:31	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 10:31	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 10:31	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 13:10
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/9 1310	**Units:**	ug/mL
Lab Code:	K2108059-057	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.9**	1.0	1	07/16/21 19:29	7/14/21	
Acetaldehyde	**25**	1.0	1	07/16/21 19:29	7/14/21	
Propionaldehyde	**1.2**	1.0	1	07/16/21 19:29	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 13:15
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/9 1315	**Units:**	ug/mL
Lab Code:	K2108059-058	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.7**	1.0	1	07/16/21 10:51	7/14/21	
Acetaldehyde	**4.2**	1.0	1	07/16/21 10:51	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 10:51	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 13:40
Date Received: 07/13/21 10:30

Sample Name: 1A-ASB Inf. 7/9 1340
Lab Code: K2108059-059

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 11:10	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 11:10	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 11:10	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 13:45
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/9 1345	**Units:**	ug/mL
Lab Code:	K2108059-060	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 11:29	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 11:29	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 11:29	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order
Date Collected: 07/09/21 12:48
Sample Matrix: Wastewater
Date Received: 07/13/21 10:30

Sample Name: 5A-ASB Zone 1 7/9 1248
Units: ug/mL
Lab Code: K2108059-061
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 11:48	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 11:48	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 11:48	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 13:26
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/9 1326	**Units:**	ug/mL
Lab Code:	K2108059-062	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 14:31	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 14:31	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 14:31	7/14/21	

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Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 13:44
Date Received: 07/13/21 10:30

Sample Name: 5C-ASB Zone 3 7/9 1344
Lab Code: K2108059-063

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 14:58	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 14:58	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 14:58	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 08:00
Date Received: 07/13/21 10:30

Sample Name: 1A-ASB Inf. 7/9 0800
Lab Code: K2108059-064

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 14:10	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 14:10	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 14:10	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 08:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/9 0800	**Units:**	ug/mL
Lab Code:	K2108059-065	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 15:17	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 15:17	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 15:17	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 08:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/9 0800	**Units:**	ug/mL
Lab Code:	K2108059-066	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01

Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.5**		1.0	1	07/16/21 19:49	7/14/21	
Acetaldehyde	**24**		1.0	1	07/16/21 19:49	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/16/21 19:49	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 08:05
Date Received: 07/13/21 10:30

Sample Name: 2B-Foul Cond. Out. 7/9 0805
Lab Code: K2108059-067

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**1.3**	1.0	1	07/16/21 15:37	7/14/21	
Acetaldehyde	**3.6**	1.0	1	07/16/21 15:37	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 15:37	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 08:45
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/9 0845	**Units:**	ug/mL
Lab Code:	K2108059-068	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 15:56	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 15:56	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 15:56	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 09:25
Date Received: 07/13/21 10:30

Sample Name: 5B-ASB Zone 2 7/9 0925
Lab Code: K2108059-069

Units: ug/mL
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 16:16	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 16:16	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 16:16	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 09:53
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/9 0953	**Units:**	ug/mL
Lab Code:	K2108059-070	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/16/21 16:35	7/14/21	
Acetaldehyde	ND U	1.0	1	07/16/21 16:35	7/14/21	
Propionaldehyde	ND U	1.0	1	07/16/21 16:35	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order
Date Collected: 07/07/21 08:00
Sample Matrix: Wastewater
Date Received: 07/13/21 10:30

Sample Name: 2A-Foul Cond. Inlet 7/7 Composite
Units: ug/mL
Lab Code: K2108059-074
Basis: NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.4**		1.0	1	07/16/21 20:08	7/14/21	
Acetaldehyde	**22**		1.0	1	07/16/21 20:08	7/14/21	
Propionaldehyde	ND	U	1.0	1	07/16/21 20:08	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/08/21 08:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/8 Composite	**Units:**	ug/mL
Lab Code:	K2108059-078	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	**7.7**	1.0	1	07/16/21 20:27	7/14/21	
Acetaldehyde	**28**	1.0	1	07/16/21 20:27	7/14/21	
Propionaldehyde	**1.1**	1.0	1	07/16/21 20:27	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 16:10
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/11 1610	**Units:**	ug/mL
Lab Code:	K2108059-001	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2000**	5.0	10	07/15/21 01:39	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 16:15
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/11 1615	**Units:**	ug/mL
Lab Code:	K2108059-002	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**360**	0.50	1	07/15/21 01:59	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 16:40
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/11 1640	**Units:**	ug/mL
Lab Code:	K2108059-003	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**89**	0.50	1	07/15/21 02:19	7/14/21	

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Superset Reference:21-0000597063 rev 00

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Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/11/21 16:45
Date Received: 07/13/21 10:30

Sample Name: 1B-ASB Eff. 7/11 1645
Lab Code: K2108059-004

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**0.93**	0.50	1	07/15/21 03:20	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 16:12
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/11 1612	**Units:**	ug/mL
Lab Code:	K2108059-005	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**43**	0.50	1	07/15/21 03:40	7/14/21	

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Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/11/21 16:44
Date Received: 07/13/21 10:30

Sample Name: 5B-ASB Zone 2 7/11 1644
Lab Code: K2108059-006

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**9.3**	0.50	1	07/15/21 04:00	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 17:02
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/11 1702	**Units:**	ug/mL
Lab Code:	K2108059-007	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 04:20	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 12:20
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/11 1220	**Units:**	ug/mL
Lab Code:	K2108059-008	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2000**	5.0	10	07/15/21 04:40	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 12:25
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/11 1225	**Units:**	ug/mL
Lab Code:	K2108059-009	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**360**	0.50	1	07/15/21 05:00	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 12:55
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/11 1255	**Units:**	ug/mL
Lab Code:	K2108059-010	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**89**	0.50	1	07/15/21 05:20	7/14/21	

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Superset Reference:21-0000597063 rev 00

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 13:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/11 1300	**Units:**	ug/mL
Lab Code:	K2108059-011	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**0.94**	0.50	1	07/15/21 05:41	7/14/21	

Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2108059
Project:	DHEC Order		**Date Collected:**	07/11/21 12:25
Sample Matrix:	Wastewater		**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/11 1225		**Units:**	ug/mL
Lab Code:	K2108059-012		**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**43**	0.50	1	07/15/21 06:01	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 12:49
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/11 1249	**Units:**	ug/mL
Lab Code:	K2108059-013	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**12**	0.50	1	07/15/21 06:58	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 13:09
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/11 1309	**Units:**	ug/mL
Lab Code:	K2108059-014	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 07:17	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/11/21 08:15
Date Received: 07/13/21 10:30

Sample Name: 2A-Foul Cond. Inlet 7/11 0815
Lab Code: K2108059-015

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2000**	5.0	10	07/15/21 07:36	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 08:20
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/11 0820	**Units:**	ug/mL
Lab Code:	K2108059-016	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**390**	0.50	1	07/15/21 07:56	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 08:50
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/11 0850	**Units:**	ug/mL
Lab Code:	K2108059-017	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**70**	0.50	1	07/15/21 08:15	7/14/21	

Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2108059
Project:	DHEC Order		**Date Collected:**	07/11/21 08:55
Sample Matrix:	Wastewater		**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/11 0855		**Units:**	ug/mL
Lab Code:	K2108059-018		**Basis:**	NA

Methodanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**0.67**	0.50	1	07/15/21 08:35	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 08:35
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/11 0835	**Units:**	ug/mL
Lab Code:	K2108059-019	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**45**	0.50	1	07/15/21 08:54	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 09:04
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/11 0904	**Units:**	ug/mL
Lab Code:	K2108059-020	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**12**	0.50	1	07/15/21 09:13	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/11/21 09:25
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/11 0925	**Units:**	ug/mL
Lab Code:	K2108059-021	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 09:33	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:05
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/10 1605	**Units:**	ug/mL
Lab Code:	K2108059-022	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2300**	5.0	10	07/15/21 10:32	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:10
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/10 1610	**Units:**	ug/mL
Lab Code:	K2108059-023	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**420**	0.50	1	07/15/21 10:52	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:40
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/10 1640	**Units:**	ug/mL
Lab Code:	K2108059-024	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**84**	0.50	1	07/15/21 12:09	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 16:45
Date Received: 07/13/21 10:30

Sample Name: 1B-ASB Eff. 7/10 1645
Lab Code: K2108059-025

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 12:28	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 17:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/10 1700	**Units:**	ug/mL
Lab Code:	K2108059-026	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**61**	0.50	1	07/15/21 12:48	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:32
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/10 1632	**Units:**	ug/mL
Lab Code:	K2108059-027	**Basis:**	NA

Methodanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**11**	0.50	1	07/15/21 13:15	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 16:15
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/10 1615	**Units:**	ug/mL
Lab Code:	K2108059-028	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 13:35	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 12:15
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/10 1215	**Units:**	ug/mL
Lab Code:	K2108059-029	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2300**	5.0	10	07/15/21 13:54	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 12:20
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/10 1220	**Units:**	ug/mL
Lab Code:	K2108059-030	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**390**	0.50	1	07/15/21 14:14	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 13:04
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/10 1304	**Units:**	ug/mL
Lab Code:	K2108059-031	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**81**	0.50	1	07/15/21 14:34	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 13:09
Date Received: 07/13/21 10:30

Sample Name: 1B-ASB Eff. 7/10 1309
Lab Code: K2108059-032

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 14:54	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 13:07
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/10 1307	**Units:**	ug/mL
Lab Code:	K2108059-033	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**57**	0.50	1	07/15/21 15:14	7/14/21	

Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 12:33
Date Received: 07/13/21 10:30

Sample Name: 5B-ASB Zone 2 7/10 1233
Lab Code: K2108059-034

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**8.4**	0.50	1	07/15/21 15:34	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 12:14
Date Received: 07/13/21 10:30

Sample Name: 5C-ASB Zone 3 7/10 1214
Lab Code: K2108059-035

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 15:55	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:20
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/10 0820	**Units:**	ug/mL
Lab Code:	K2108059-036	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2200**	5.0	10	07/15/21 16:15	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 08:25
Date Received: 07/13/21 10:30

Sample Name: 2B-Foul Cond. Out 7/10 0825
Lab Code: K2108059-037

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**410**	0.50	1	07/15/21 16:34	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:50
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/10 0850	**Units:**	ug/mL
Lab Code:	K2108059-038	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**110**	0.50	1	07/15/21 16:54	7/14/21	

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Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater
Service Request: K2108059
Date Collected: 07/10/21 08:55
Date Received: 07/13/21 10:30

Sample Name: 1B-ASB Eff. 7/10 0855
Lab Code: K2108059-039
Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 17:13	7/14/21	

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Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 09:39
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/10 0939	**Units:**	ug/mL
Lab Code:	K2108059-040	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**59**	0.50	1	07/15/21 17:32	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:31
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/10 0831	**Units:**	ug/mL
Lab Code:	K2108059-041	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**8.4**	0.50	1	07/16/21 22:03	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:14
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/10 0814	**Units:**	ug/mL
Lab Code:	K2108059-042	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 18:49	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 09:39
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/10 0939 Dup	**Units:**	ug/mL
Lab Code:	K2108059-043	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**57**	0.50	1	07/15/21 19:09	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/10/21 08:31
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/10 0831 Dup	**Units:**	ug/mL
Lab Code:	K2108059-044	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**10**	0.50	1	07/15/21 19:28	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/10/21 08:14
Date Received: 07/13/21 10:30

Sample Name: 5C-ASB Zone 3 7/10 0814 Dup
Lab Code: K2108059-045

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**0.86**	0.50	1	07/15/21 19:48	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/9 1700 Dup	**Units:**	ug/mL
Lab Code:	K2108059-046	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2400**	5.0	10	07/15/21 20:07	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:05
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/9 1705 Dup	**Units:**	ug/mL
Lab Code:	K2108059-047	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**430**	0.50	1	07/15/21 20:26	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:40
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-Foul Cond. Inlet 7/9 1740 Dup	**Units:**	ug/mL
Lab Code:	K2108059-048	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**78**	0.50	1	07/15/21 20:45	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:45
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-Foul Cond. Out. 7/9 1745 Dup	**Units:**	ug/mL
Lab Code:	K2108059-049	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 21:04	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/9 1700	**Units:**	ug/mL
Lab Code:	K2108059-050	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2500**	5.0	10	07/15/21 21:23	7/14/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:05
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/9 1705	**Units:**	ug/mL
Lab Code:	K2108059-051	**Basis:**	NA

Methodanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**440**	0.50	1	07/15/21 21:43	7/14/21	

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Superset Reference:21-0000597063 rev 00

ALS Group USA, Corp.
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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:40
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/9 1740	**Units:**	ug/mL
Lab Code:	K2108059-052	**Basis:**	NA

Methodanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**82**	0.50	1	07/15/21 22:02	7/14/21	

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Superset Reference:21-0000597063 rev 00

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:45
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/9 1745	**Units:**	ug/mL
Lab Code:	K2108059-053	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 22:21	7/14/21	

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Superset Reference:21-0000597063 rev 00

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 16:36
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/9 1636	**Units:**	ug/mL
Lab Code:	K2108059-054	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**88**	0.50	1	07/15/21 22:40	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 17:03
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/9 1703	**Units:**	ug/mL
Lab Code:	K2108059-055	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**7.3**	0.50	1	07/17/21 14:15	7/14/21	

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Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 17:19
Date Received: 07/13/21 10:30

Sample Name: 5C-ASB Zone 3 7/9 1719
Lab Code: K2108059-056

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/16/21 00:19	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 13:10
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/9 1310	**Units:**	ug/mL
Lab Code:	K2108059-057	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2400**	5.0	10	07/16/21 00:39	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 13:15
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2B-Foul Cond. Out. 7/9 1315	**Units:**	ug/mL
Lab Code:	K2108059-058	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**440**	0.50	1	07/16/21 00:59	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 13:40
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/9 1340	**Units:**	ug/mL
Lab Code:	K2108059-059	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**60**	0.50	1	07/16/21 01:19	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 13:45
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1B-ASB Eff. 7/9 1345	**Units:**	ug/mL
Lab Code:	K2108059-060	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/16/21 01:39	7/14/21	

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Superset Reference:21-0000597063 rev 00

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 12:48
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/9 1248	**Units:**	ug/mL
Lab Code:	K2108059-061	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**82**	0.50	1	07/16/21 01:59	7/14/21	

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 13:26
Date Received: 07/13/21 10:30

Sample Name: 5B-ASB Zone 2 7/9 1326
Lab Code: K2108059-062

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**4.2**	0.50	1	07/16/21 02:59	7/14/21	

Analytical Report

Client:	New-Indy Containerboard		**Service Request:**	K2108059
Project:	DHEC Order		**Date Collected:**	07/09/21 13:44
Sample Matrix:	Wastewater		**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/9 1344		**Units:**	ug/mL
Lab Code:	K2108059-063		**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/16/21 03:19	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 08:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	1A-ASB Inf. 7/9 0800	**Units:**	ug/mL
Lab Code:	K2108059-064	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**93**	0.50	1	07/16/21 03:39	7/14/21	

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Analytical Report

Client: New-Indy Containerboard
Service Request: K2108059
Project: DHEC Order
Date Collected: 07/09/21 08:00
Sample Matrix: Wastewater
Date Received: 07/13/21 10:30

Sample Name: 1B-ASB Eff. 7/9 0800
Units: ug/mL
Lab Code: K2108059-065
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/16/21 03:59	7/14/21	

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Superset Reference:21-0000597063 rev 00

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 08:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/9 0800	**Units:**	ug/mL
Lab Code:	K2108059-066	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2300**	5.0	10	07/16/21 04:19	7/14/21	

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Superset Reference:21-0000597063 rev 00

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Analytical Report

Client: New-Indy Containerboard
Project: DHEC Order
Sample Matrix: Wastewater

Service Request: K2108059
Date Collected: 07/09/21 08:05
Date Received: 07/13/21 10:30

Sample Name: 2B-Foul Cond. Out. 7/9 0805
Lab Code: K2108059-067

Units: ug/mL
Basis: NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**380**	0.50	1	07/16/21 22:42	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 08:45
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5A-ASB Zone 1 7/9 0845	**Units:**	ug/mL
Lab Code:	K2108059-068	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**70**	0.50	1	07/16/21 23:01	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 09:25
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5B-ASB Zone 2 7/9 0925	**Units:**	ug/mL
Lab Code:	K2108059-069	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**3.1**	0.50	1	07/16/21 05:19	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/09/21 09:53
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	5C-ASB Zone 3 7/9 0953	**Units:**	ug/mL
Lab Code:	K2108059-070	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/16/21 05:40	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/07/21 08:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/7 Composite	**Units:**	ug/mL
Lab Code:	K2108059-074	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2200**	5.0	10	07/16/21 23:21	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	07/08/21 08:00
Sample Matrix:	Wastewater	**Date Received:**	07/13/21 10:30
Sample Name:	2A-Foul Cond. Inlet 7/8 Composite	**Units:**	ug/mL
Lab Code:	K2108059-078	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03

Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	**2300**	5.0	10	07/16/21 06:20	7/14/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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www.alsglobal.com

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2112999-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/14/21 19:27	7/14/21	
Acetaldehyde	ND U	1.0	1	07/14/21 19:27	7/14/21	
Propionaldehyde	ND U	1.0	1	07/14/21 19:27	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2113000-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/14/21 20:05	7/14/21	
Acetaldehyde	ND U	1.0	1	07/14/21 20:05	7/14/21	
Propionaldehyde	ND U	1.0	1	07/14/21 20:05	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2113001-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/14/21 20:43	7/14/21	
Acetaldehyde	ND U	1.0	1	07/14/21 20:43	7/14/21	
Propionaldehyde	ND U	1.0	1	07/14/21 20:43	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2113002-04	**Basis:**	NA

Selected HAPS in Condensates by GC/FID

Analysis Method: NCASI HAPS-99.01
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
2-Butanone (MEK)	ND U	1.0	1	07/14/21 21:22	7/14/21	
Acetaldehyde	ND U	1.0	1	07/14/21 21:22	7/14/21	
Propionaldehyde	ND U	1.0	1	07/14/21 21:22	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2113003-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/14/21 22:00	7/14/21	

Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2113005-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/14/21 23:39	7/14/21	

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2113007-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 00:19	7/14/21	

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Analytical Report

Client:	New-Indy Containerboard	**Service Request:**	K2108059
Project:	DHEC Order	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/mL
Lab Code:	KQ2113008-04	**Basis:**	NA

Methanol in Process Liquids by GC/FID

Analysis Method: NCASI MeOH-94.03
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Methanol	ND U	0.50	1	07/15/21 00:59	7/14/21	

PACE LABORATORY REPORTS – COD AND MLVSS

Pace Analytical®

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Lot Number:**WF25084**

Date Completed:06/28/2021

06/29/2021 3:50 PM
Approved and released by:
Project Manager I: **Blaire M. Gagne**

NELAP ACCREDITED TNI LABORATORY

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
New-Indy Catawba LLC
Lot Number: WF25084

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

PACE ANALYTICAL SERVICES, LLC

Sample Summary

New-Indy Catawba LLC

Lot Number: WF25084

Project Name:

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-755 2.0 ASB INF	Aqueous	06/24/2021 0850	06/25/2021
002	21-756 2.5 ASB EFF	Aqueous	06/24/2021 0845	06/25/2021
003	21-757 SI Stripper Inlet	Aqueous	06/24/2021 0800	06/25/2021
004	21-758 SI Stripper Outlet	Aqueous	06/24/2021 0910	06/25/2021

(4 samples)

Detection Summary

New-Indy Catawba LLC

Lot Number: WF25084

Project Name:

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-755 2.0 ASB INF	Aqueous	COD	SM 5220D-	1700		mg/L	5
002	21-756 2.5 ASB EFF	Aqueous	COD	SM 5220D-	740		mg/L	6
003	21-757 SI Stripper Inlet	Aqueous	COD	SM 5220D-	5400		mg/L	7
004	21-758 SI Stripper Outlet	Aqueous	COD	SM 5220D-	2500		mg/L	8

(4 detections)

Inorganic non-metals

Client:	**New-Indy Catawba LLC**	Laboratory ID:	**WF25084-001**
Description:	**21-755 2.0 ASB INF**	Matrix:	**Aqueous**
Date Sampled:	**06/24/2021 0850**	Project Name:	
Date Received:	**06/25/2021**	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	06/26/2021 2220	DAK		96968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		**SM 5220D-2011**	**1700**		**80**	**mg/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client:	**New-Indy Catawba LLC**	Laboratory ID:	**WF25084-002**
Description:	**21-756 2.5 ASB EFF**	Matrix:	**Aqueous**
Date Sampled:	**06/24/2021 0845**	Project Name:	
Date Received:	**06/25/2021**	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	06/26/2021 2221	DAK		96968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		**SM 5220D-2011**	**740**		**40**	**mg/L**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client: **New-Indy Catawba LLC**

Laboratory ID: **WF25084-003**

Description: **21-757 SI Stripper Inlet**

Matrix: **Aqueous**

Date Sampled: **06/24/2021 0800**

Project Name:

Date Received: **06/25/2021**

Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	06/26/2021 2221	DAK		96968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		**SM 5220D-2011**	**5400**		**200**	**mg/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client:	**New-Indy Catawba LLC**	Laboratory ID:	**WF25084-004**
Description:	**21-758 SI Stripper Outlet**	Matrix:	**Aqueous**
Date Sampled:	**06/24/2021 0910**	Project Name:	
Date Received:	**06/25/2021**	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	06/26/2021 2222	DAK		96968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		**SM 5220D-2011**	**2500**		**80**	**mg/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Chain of Custody

and

Miscellaneous Documents

PaceAnalytical®

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106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60364

Alan Dale Robinson

NEW Indy Address	Client	Report to Contact: Dan Mallett	Sampler (Printed Name): Gerness Harris
		Telephone No/Email: (803) 981-8010	Quote No. 10536
City: Catawba	State: SC	Zip Code: 29704	Page of
Project Name			

Preservative
1. Unpres. 4. HNO3
2. NaOH 5. HCl
3. H2SO4 6. Sodium Thiosulfate

Field Parameters (i.e., pH, temp, DO) can be recorded below

Number of Containers: 4
Container Type: P=Plastic, G=Glass: P
Preservative (see code on left): 3

WF25084

Project Number

P.O. Number

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp.° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	↑ Analysis ↓	COD	Remarks / Cooler ID
~~21-763~~ 21-755	Start								
2.0 ASB INF	Finish 6-24-21	0850	G		N	WW		X	48 TAT
~~21-764~~ 21-756	Start								
2.5 ASB EFF	Finish 6-24-21	0845	G		N	WW		X	48 TAT
21-757	Start								
SI Stripper Inlet	Finish 6-24-21	0800	G		N	WW		X	48 TAT
21-758	Start								
SI Stripper outlet	Finish 6-24-21	0910	G		N	WW		X	48TAT
	Start								
	Finish								

Turn Around Time Required (Prior lab approval required for expedited TAT.)
☐ Standard ☑ ~~Rush~~ (Please Specify)

Sample Disposal
☐ Return to Client ☑ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

Relinquished by	Date	Time	Received by	Date	Time
1. Relinquished by / Sampler: Gerness Harris	6-24-21	0900	1. Received by: Ref Secure Area	6-24-21	0900
2. Relinquished by: Gerness Harris	6-24-21	0900	2. Received by: Ref Secure Area	6-24-21	900
3. Relinquished by: Alan Dale Robinson	6-24-21	0805	3. Received by: Ref Secure Area	6-24-21	0805
4. Relinquished by: Gerness Harris	6-24-21	0915	4. Laboratory Received by: Ref. Secure Area	6-24-21	0915

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☑ Yes ☐ No ☐ Ice Pack
Receipt Temp. 2.8 °C
Temp. Blank ☑ Y / ☐ No

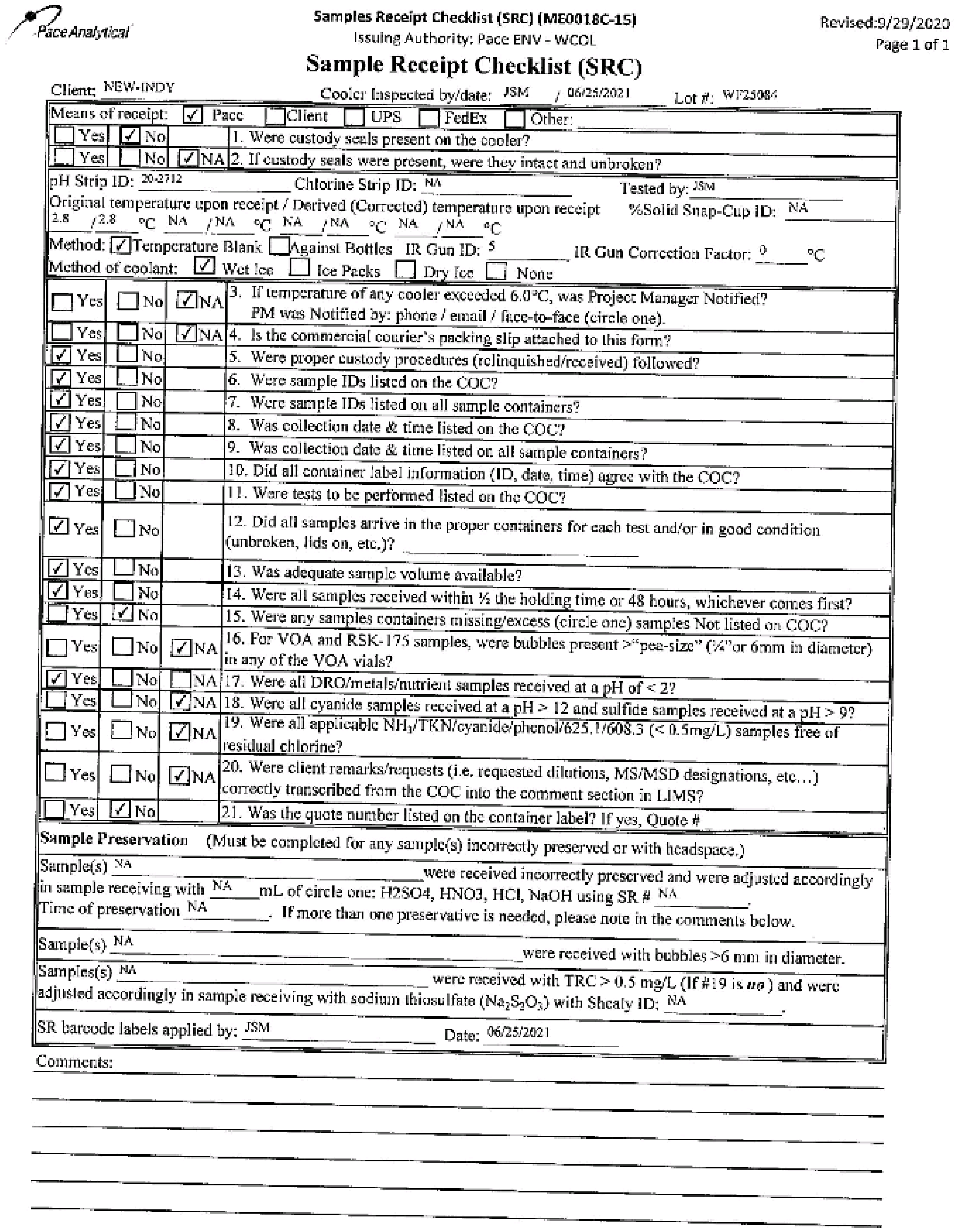
DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

LQD REF SECURE AREA 6.25.21 1420 RECD 6.25.21 1420

REL QD 6.25.21 1633

6/28/21 1033

Document Number: ME00SN1-01



Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW-INDY Cooler Inspected by/date: JSM / 06/25/2021 Lot #: WP25084

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: ______

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712 Chlorine Strip ID: NA Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.8 / 2.8 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ______
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 06/25/2021

Comments:

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Project Name: COD Study

Lot Number:**WF25085**

Date Completed:06/29/2021

06/29/2021 5:28 PM
Approved and released by:
Project Manager I: **Blaire M. Gagne**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
New-Indy Catawba LLC
Lot Number: WF25085

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary

New-Indy Catawba LLC

Lot Number: WF25085

Project Name: COD Study

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-763 2.0 ASB INF	Aqueous	06/25/2021 0940	06/25/2021
002	21-764 2.5 ASB EFF	Aqueous	06/25/2021 0945	06/25/2021
003	21-765 SI Stripper Inlet	Aqueous	06/25/2021 0805	06/25/2021
004	21-766 SI Stripper Outlet	Aqueous	06/25/2021 0955	06/25/2021

(4 samples)

Detection Summary

New-Indy Catawba LLC

Lot Number: WF25085

Project Name: COD Study

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-763 2.0 ASB INF	Aqueous	COD	SM 5220D-	1600		mg/L	5
002	21-764 2.5 ASB EFF	Aqueous	COD	SM 5220D-	650		mg/L	6
003	21-765 SI Stripper Inlet	Aqueous	COD	SM 5220D-	7500		mg/L	7
004	21-766 SI Stripper Outlet	Aqueous	COD	SM 5220D-	1900		mg/L	8

(4 detections)

Inorganic non-metals

Client: New-Indy Catawba LLC		Laboratory ID: WF25085-001	
Description: 21-763 2.0 ASB INF		Matrix: Aqueous	
Date Sampled: 06/25/2021 0940	Project Name: COD Study		
Date Received: 06/25/2021	Project Number:		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	06/26/2021 2223	DAK		96968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1600		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC

Laboratory ID: WF25085-002

Description: 21-764 2.5 ASB EFF

Matrix: Aqueous

Date Sampled: 06/25/2021 0945

Project Name: COD Study

Date Received: 06/25/2021

Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	06/26/2021 2223	DAK		96968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	650		40	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WF25085-003
Description: 21-765 SI Stripper Inlet
Matrix: Aqueous
Date Sampled: 06/25/2021 0805
Project Name: COD Study
Date Received: 06/25/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	06/26/2021 2223	DAK		96968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	7500		200	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WF25085-004
Description:	21-766 SI Stripper Outlet	Matrix:	Aqueous
Date Sampled:	06/25/2021 0955	Project Name:	COD Study
Date Received:	06/25/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	06/26/2021 2224	DAK		96968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1900		40	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

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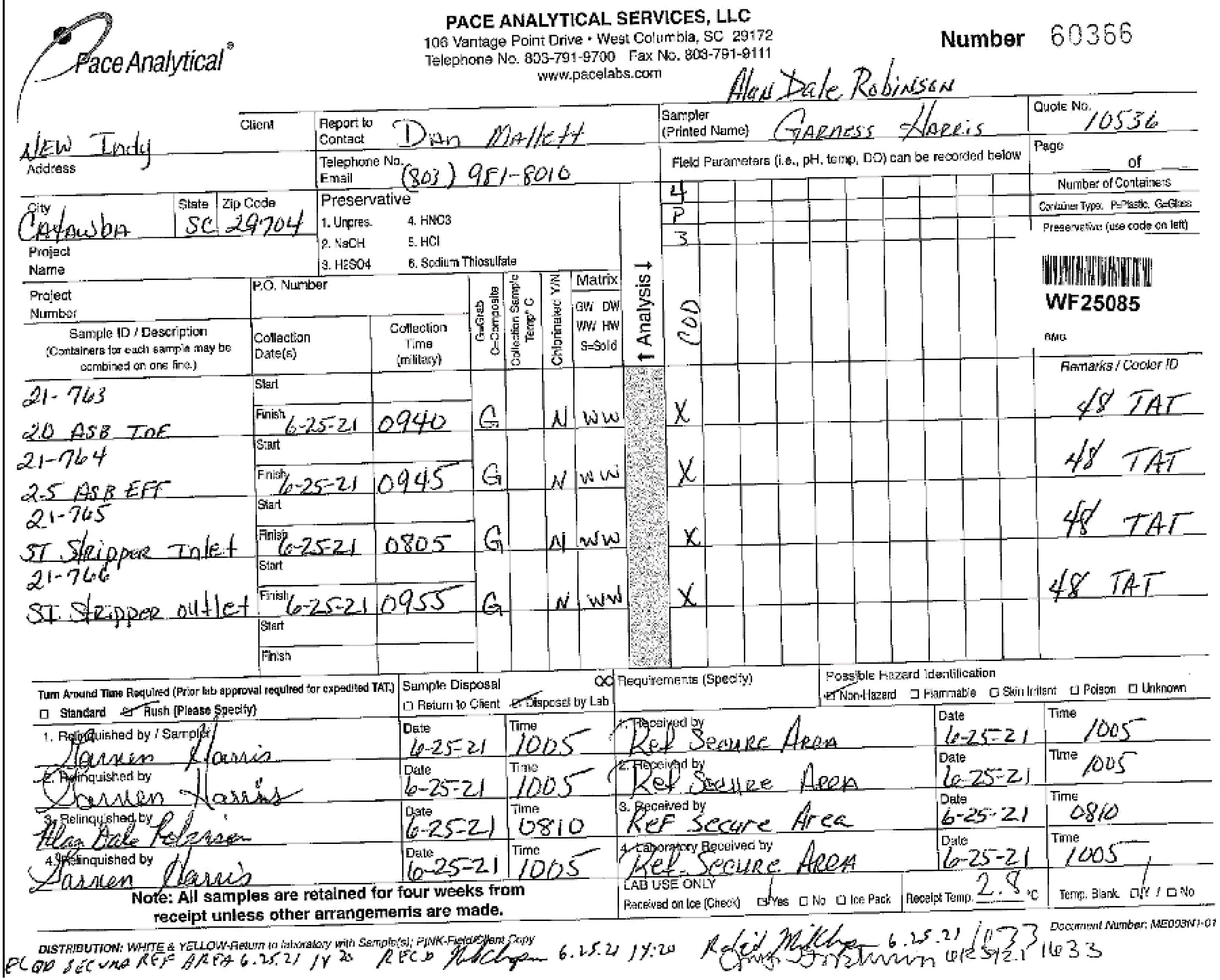
Chain of Custody
and
Miscellaneous Documents



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Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60366

Client: NEW Indy
Address:
City: Catawba State: SC Zip Code: 29704
Project Name:
Project Number:
Report to Contact: Dan Mallett
Telephone No. / Email: (803) 981-8010
P.O. Number:
Sampler (Printed Name): Garness Harris
Alan Dale Robinson
Quote No. 10536
Page of

Preservative
1. Unpres. 4. HNO3
2. NaOH 5. HCl
3. H2SO4 6. Sodium Thiosulfate

Field Parameters (i.e., pH, temp, DO) can be recorded below

Number of Containers: 1
Container Type. P=Plastic, G=Glass: P
Preservative (use code on left): 3

WF25085

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	↑ Analysis ↓ COD	Remarks / Cooler ID
21-763 20 ASB Toe	Start Finish 6-25-21	0940	G		N	WW	X	48 TAT
21-764 2.5 ASB EFF	Start Finish 6-25-21	0945	G		N	WW	X	48 TAT
21-765 ST Stripper Inlet	Start Finish 6-25-21	0805	G		N	WW	X	48 TAT
21-766 ST Stripper outlet	Start Finish 6-25-21	0955	G		N	WW	X	48 TAT
	Start Finish							

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☑ Rush (Please Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

Relinquished by	Date	Time	Received by	Date	Time
1. Relinquished by / Sampler: Garness Harris	6-25-21	1005	1. Received by: Ref Secure Area	6-25-21	1005
2. Relinquished by: Garness Harris	6-25-21	1005	2. Received by: Ref Secure Area	6-25-21	1005
3. Relinquished by: Alan Dale Robinson	6-25-21	0810	3. Received by: Ref Secure Area	6-25-21	0810
4. Relinquished by: Garness Harris	6-25-21	1005	4. Laboratory Received by: Ref Secure Area	6-25-21	1005

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☑ Yes ☐ No ☐ Ice Pack Receipt Temp. 2.8 °C Temp. Blank ☑ Y / ☐ No

Document Number: ME003N1-01

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

RLQD SECURE REF AREA 6.25.21 14 20 RECD 6.25.21 14:20 Robert Milner 6.25.21 1633
6.25.21 1633

PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW-INDY Cooler Inspected by/date: JSM / 06/25/2021 Lot #: WF25085

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: ________

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712 Chlorine Strip ID: NA Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.8 / 2.8 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ________
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 06/25/2021

Comments: ________

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Project Name: COD Study

Lot Number:**WF28034**

Date Completed:06/29/2021

06/30/2021 12:43 PM
Approved and released by:
Project Manager I: **Blaire M. Gagne**

Case Narrative
New-Indy Catawba LLC
Lot Number: WF28034

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary

New-Indy Catawba LLC

Lot Number: WF28034

Project Name: COD Study

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-778 2.0 ASB INF	Aqueous	06/28/2021 0855	06/28/2021
002	21-779 2.5 ASB EFF	Aqueous	06/28/2021 0900	06/28/2021
003	21-780 SI Stripper Inlet	Aqueous	06/28/2021 0800	06/28/2021
004	21-781 SI Stripper Outlet	Aqueous	06/28/2021 0805	06/28/2021

(4 samples)

Detection Summary

New-Indy Catawba LLC

Lot Number: WF28034

Project Name: COD Study

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-778 2.0 ASB INF	Aqueous	COD	SM 5220D-	1200		mg/L	5
002	21-779 2.5 ASB EFF	Aqueous	COD	SM 5220D-	600		mg/L	6
003	21-780 SI Stripper Inlet	Aqueous	COD	SM 5220D-	7400		mg/L	7
004	21-781 SI Stripper Outlet	Aqueous	COD	SM 5220D-	2200		mg/L	8

(4 detections)

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WF28034-001
Description: 21-778 2.0 ASB INF
Matrix: Aqueous
Date Sampled: 06/28/2021 0855
Project Name: COD Study
Date Received: 06/28/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	06/29/2021 1545	KFE		97224

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1200		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WF28034-002
Description:	21-779 2.5 ASB EFF	Matrix:	Aqueous
Date Sampled:	06/28/2021 0900	Project Name:	COD Study
Date Received:	06/28/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	06/29/2021 1546	KFE		97224

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	600		40	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WF28034-003
Description: 21-780 SI Stripper Inlet
Matrix: Aqueous
Date Sampled: 06/28/2021 0800
Project Name: COD Study
Date Received: 06/28/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	06/29/2021 1546	KFE		97224

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	7400		200	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC

Laboratory ID: WF28034-004

Description: 21-781 SI Stripper Outlet

Matrix: Aqueous

Date Sampled: 06/28/2021 0805

Project Name: COD Study

Date Received: 06/28/2021

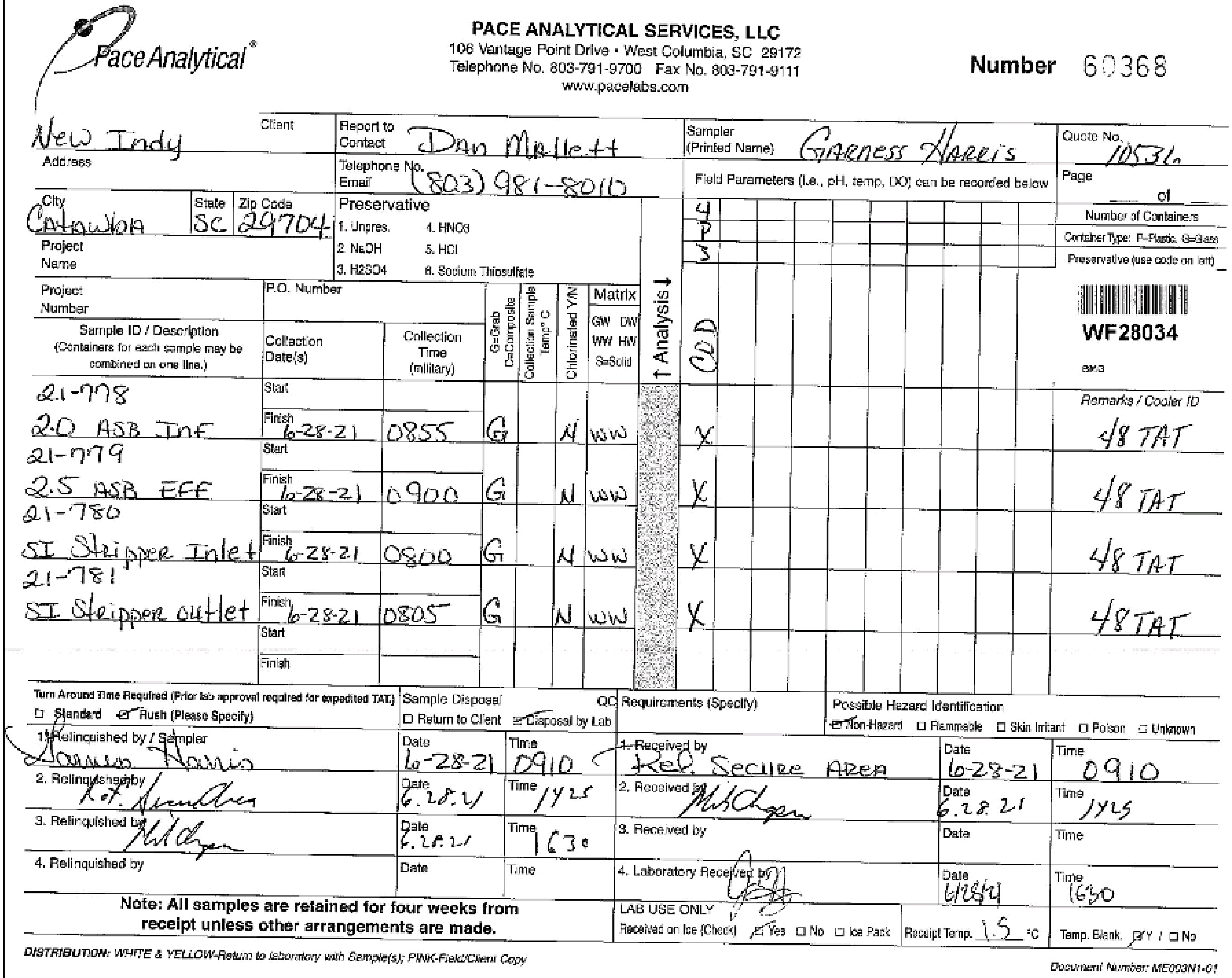
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	06/29/2021 1546	KFE		97224

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	2200		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Chain of Custody
and
Miscellaneous Documents



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Number 60368

Client: New Indy	Report to Contact: Dan Mallett	Sampler (Printed Name): Garness Harris	Quote No. 10536
Address	Telephone No. Email: (803) 981-8010	Field Parameters (i.e., pH, temp, DO) can be recorded below	Page ___ of ___
City: Catawba; State: SC; Zip Code: 29704	Preservative: 1. Unpres. 2. NaOH 3. H2SO4 4. HNO3 5. HCl 6. Sodium Thiosulfate	4	Number of Containers
Project Name		P	Container Type: P=Plastic, G=Glass
		3	Preservative (use code on left)

WF28034

Project Number / Sample ID / Description (Containers for each sample may be combined on one line.)	P.O. Number / Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	↑ Analysis ↓ COD	Remarks / Cooler ID
21-778 2.0 ASB Inf	Start Finish 6-28-21	0855	G		N	WW	X	48 TAT
21-779 2.5 ASB Eff	Start Finish 6-28-21	0900	G		N	WW	X	48 TAT
21-780 SI Stripper Inlet	Start Finish 6-28-21	0800	G		N	WW	X	48 TAT
21-781 SI Stripper outlet	Start Finish 6-28-21	0805	G		N	WW	X	48 TAT
	Start Finish							

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☑ Rush (Please Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

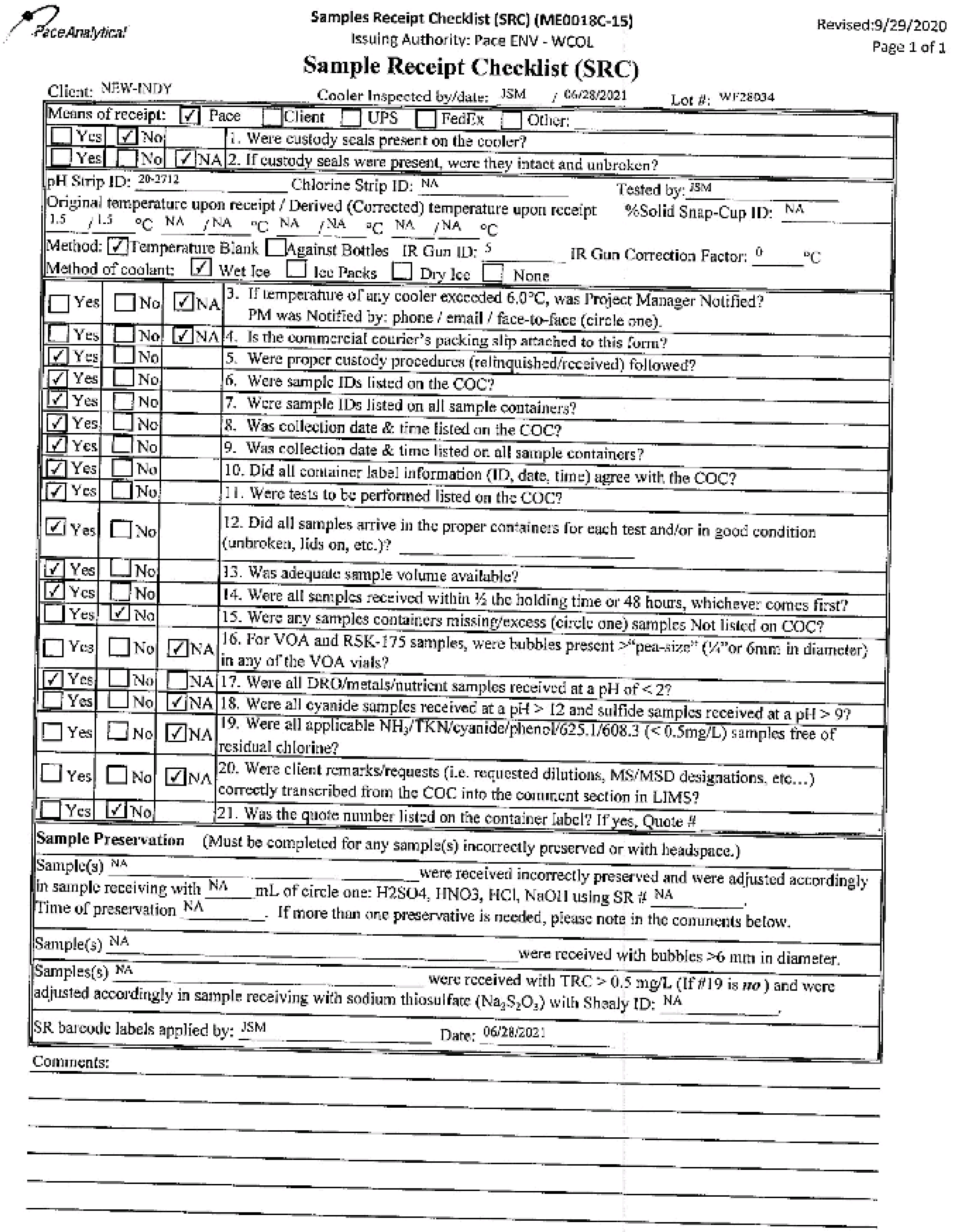
	Date	Time		Date	Time
1. Relinquished by / Sampler: Garness Harris	6-28-21	0910	1. Received by: Ref. Secure Area	6-28-21	0910
2. Relinquished by: Ref.	6.28.21	1425	2. Received by	6.28.21	1425
3. Relinquished by	6.28.21	1630	3. Received by		
4. Relinquished by			4. Laboratory Received by	6/28/21	1630

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY Received on Ice (Check) ☑ Yes ☐ No ☐ Ice Pack Receipt Temp. 1.5 °C Temp. Blank ☑ Y / ☐ No

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N1-01



PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW-INDY
Cooler Inspected by/date: JSM / 06/28/2021
Lot #: WF28034

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: ______

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712 Chlorine Strip ID: NA Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

1.5 / 1.5 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ______
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # ______

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 06/28/2021

Comments:

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Project Name: COD Study

Lot Number:**WF30059**

Date Completed:07/02/2021

Blaire Gagne

07/06/2021 3:21 PM
Approved and released by:
Project Manager I: **Blaire M. Gagne**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
New-Indy Catawba LLC
Lot Number: WF30059

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary

New-Indy Catawba LLC

Lot Number: WF30059

Project Name: COD Study

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-795 2.0 ASB INF	Aqueous	06/30/2021 0725	06/30/2021
002	21-796 2.5 ASB EFF	Aqueous	06/30/2021 0735	06/30/2021
003	21-797 SI STRIPPER INLET	Aqueous	06/30/2021 0800	06/30/2021
004	21-798 SI STRIPPER OUTLET	Aqueous	06/30/2021 0805	06/30/2021

(4 samples)

Detection Summary

New-Indy Catawba LLC

Lot Number: WF30059

Project Name: COD Study

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-795 2.0 ASB INF	Aqueous	COD	SM 5220D-	860		mg/L	5
002	21-796 2.5 ASB EFF	Aqueous	COD	SM 5220D-	540		mg/L	6
003	21-797 SI STRIPPER INLET	Aqueous	COD	SM 5220D-	8000		mg/L	7
004	21-798 SI STRIPPER OUTLET	Aqueous	COD	SM 5220D-	8600		mg/L	8

(4 detections)

Inorganic non-metals

Client: New-Indy Catawba LLC		Laboratory ID: WF30059-001	
Description: 21-795 2.0 ASB INF		Matrix: Aqueous	
Date Sampled: 06/30/2021 0725	Project Name: COD Study		
Date Received: 06/30/2021	Project Number:		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/01/2021 1658	KFE		97629

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	860		80	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WF30059-002
Description:	21-796 2.5 ASB EFF	Matrix:	Aqueous
Date Sampled:	06/30/2021 0735	Project Name:	COD Study
Date Received:	06/30/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	07/01/2021 1658	KFE		97629

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	540		40	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WF30059-003
Description:	21-797 SI STRIPPER INLET	Matrix:	Aqueous
Date Sampled:	06/30/2021 0800	Project Name:	COD Study
Date Received:	06/30/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	07/01/2021 1659	KFE		97629

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	8000		200	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WF30059-004
Description:	21-798 SI STRIPPER OUTLET	Matrix:	Aqueous
Date Sampled:	06/30/2021 0805	Project Name:	COD Study
Date Received:	06/30/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	07/01/2021 1659	KFE		97629

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	8600		200	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Chain of Custody
and
Miscellaneous Documents

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106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60372

Client: NEW Indy
Address
City: Catawba State: SC. Zip Code: 29704
Project Name
Project Number
Report to Contact: Dan Mallett
Telephone No. Email: (803) 981-8010
P.O. Number
Sampler (Printed Name): Garness Harris
David E Hensley
Quote No. 10536
Page of

Preservative
1. Unpres. 4. HNO3
2. NaOH 5. HCl
3. H2SO4 6. Sodium Thiosulfate

Field Parameters (i.e., pH, temp, DO) can be recorded below

	COD
Number of Containers	4
Container Type: P=Plastic G=Glass	P
Preservative (use code on left)	3

WF30059

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	↑ Analysis ↓ COD	Remarks / Cooler ID
21-795 20 ASB INF	Start Finish 6-30-21	0725	G		N	WW	X	48 TAT
21-796 25 ASB EFF	Start Finish 6-30-21	0735	G		N	WW	X	48 TAT
21-797 ST Stripper Inlet	Start Finish 6-30-21	0800	G		N	WW	X	48 TAT
21-798 ST Stripper outlet	Start Finish 6-30-21	0805	G		N	WW	X	48 TAT
	Start Finish							

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☑ Rush (Please Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

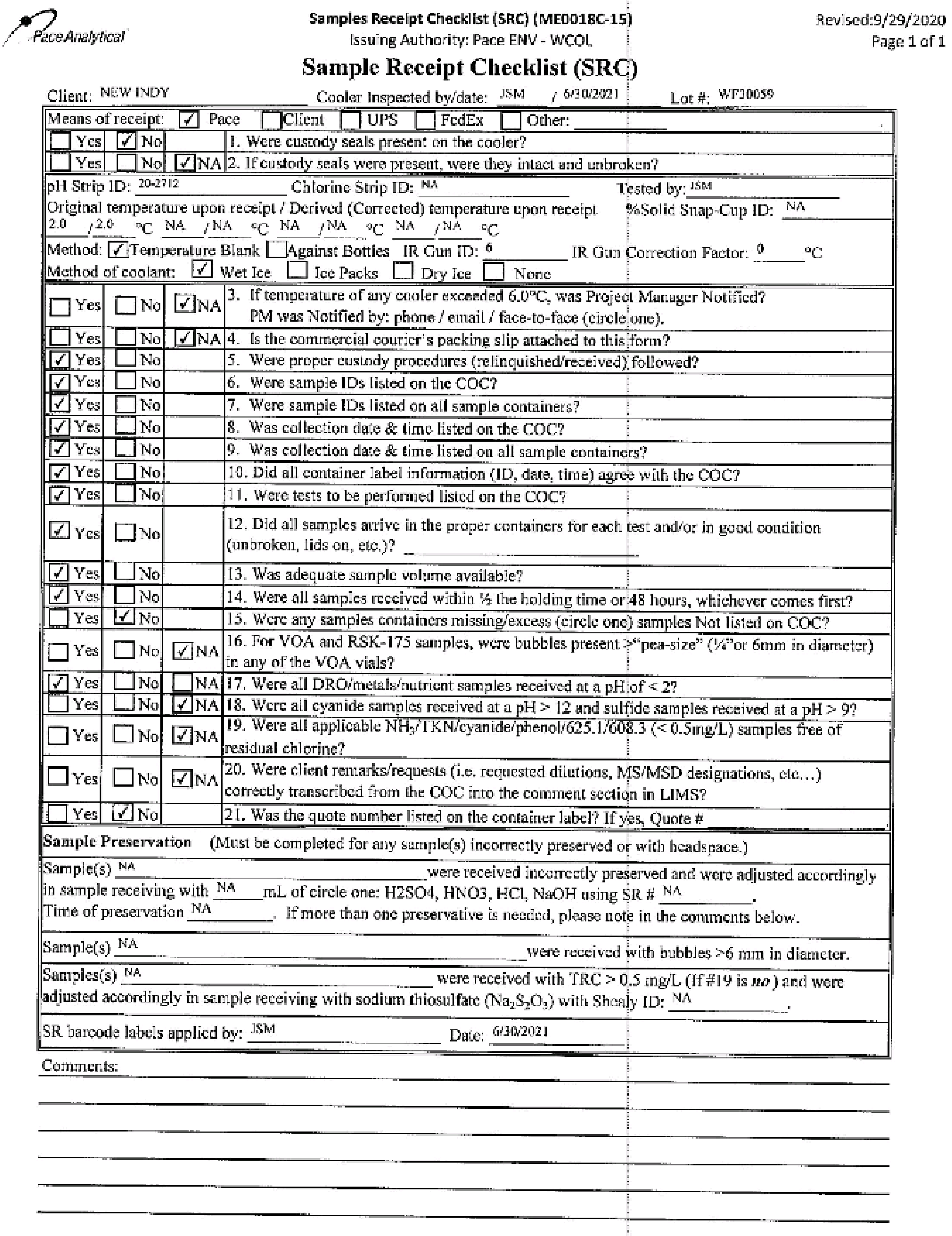
Relinquished by	Date	Time	Received by	Date	Time
1. Relinquished by / Sampler: David E Hensley	6-30-21	0750	1. Received by: Ref Secure Area	6-30-21	0750
2. Relinquished by: Garness Harris	6-30-21	0810	2. Received by: Ref Secure Area	6-30-21	0810
3. Relinquished by: Secure area	6/30/21	1255	3. Received by: Mark Kattsnee	6/30/21	1255
4. Relinquished by: Mark Kattsnee	6/30/21	1600	4. Laboratory Received by: Amy Goodwin	6/30/21	1600

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☑ Yes ☐ No ☐ Ice Pack Receipt Temp. 2.0 °C Temp. Blank ☑ Y / ☐ No

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N1-01



Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW INDY Cooler Inspected by/date: JSM / 6/30/2021 Lot #: WF30059

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: ______

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712 Chlorine Strip ID: NA Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.0 / 2.0 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ______
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # ______

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 6/30/2021

Comments:

Pace Analytical®

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Project Name: COD Study

Lot Number:**WF30061**

Date Completed:07/02/2021

Blaire Gagne

07/06/2021 3:26 PM
Approved and released by:
Project Manager I: **Blaire M. Gagne**

NELAP ACCREDITED TNI LABORATORY

ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17025
TESTING LABORATORY

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
New-Indy Catawba LLC
Lot Number: WF30061

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary

New-Indy Catawba LLC

Lot Number: WF30061

Project Name: COD Study

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-787 2.0 ASB INF	Aqueous	06/29/2021 0730	06/30/2021
002	21-788 2.5 ASB EFF	Aqueous	06/29/2021 0735	06/30/2021
003	21-789 SI STRIPPER INLET	Aqueous	06/29/2021 0800	06/30/2021
004	21-790 SI STRIPPER OUTLET	Aqueous	06/29/2021 0805	06/30/2021

(4 samples)

Detection Summary

New-Indy Catawba LLC

Lot Number: WF30061

Project Name: COD Study

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-787 2.0 ASB INF	Aqueous	COD	SM 5220D-	2100		mg/L	5
002	21-788 2.5 ASB EFF	Aqueous	COD	SM 5220D-	560		mg/L	6
003	21-789 SI STRIPPER INLET	Aqueous	COD	SM 5220D-	5500		mg/L	7
004	21-790 SI STRIPPER OUTLET	Aqueous	COD	SM 5220D-	1600		mg/L	8

(4 detections)

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WF30061-001
Description: 21-787 2.0 ASB INF
Matrix: Aqueous
Date Sampled: 06/29/2021 0730
Project Name: COD Study
Date Received: 06/30/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/01/2021 1700	KFE		97629

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	2100		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WF30061-002
Description: 21-788 2.5 ASB EFF
Matrix: Aqueous
Date Sampled: 06/29/2021 0735
Project Name: COD Study
Date Received: 06/30/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	1	07/01/2021 1700	KFE		97629

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	560		20	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WF30061-003
Description: 21-789 SI STRIPPER INLET
Matrix: Aqueous
Date Sampled: 06/29/2021 0800
Project Name: COD Study
Date Received: 06/30/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	07/01/2021 1702	KFE		97629

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	5500		200	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

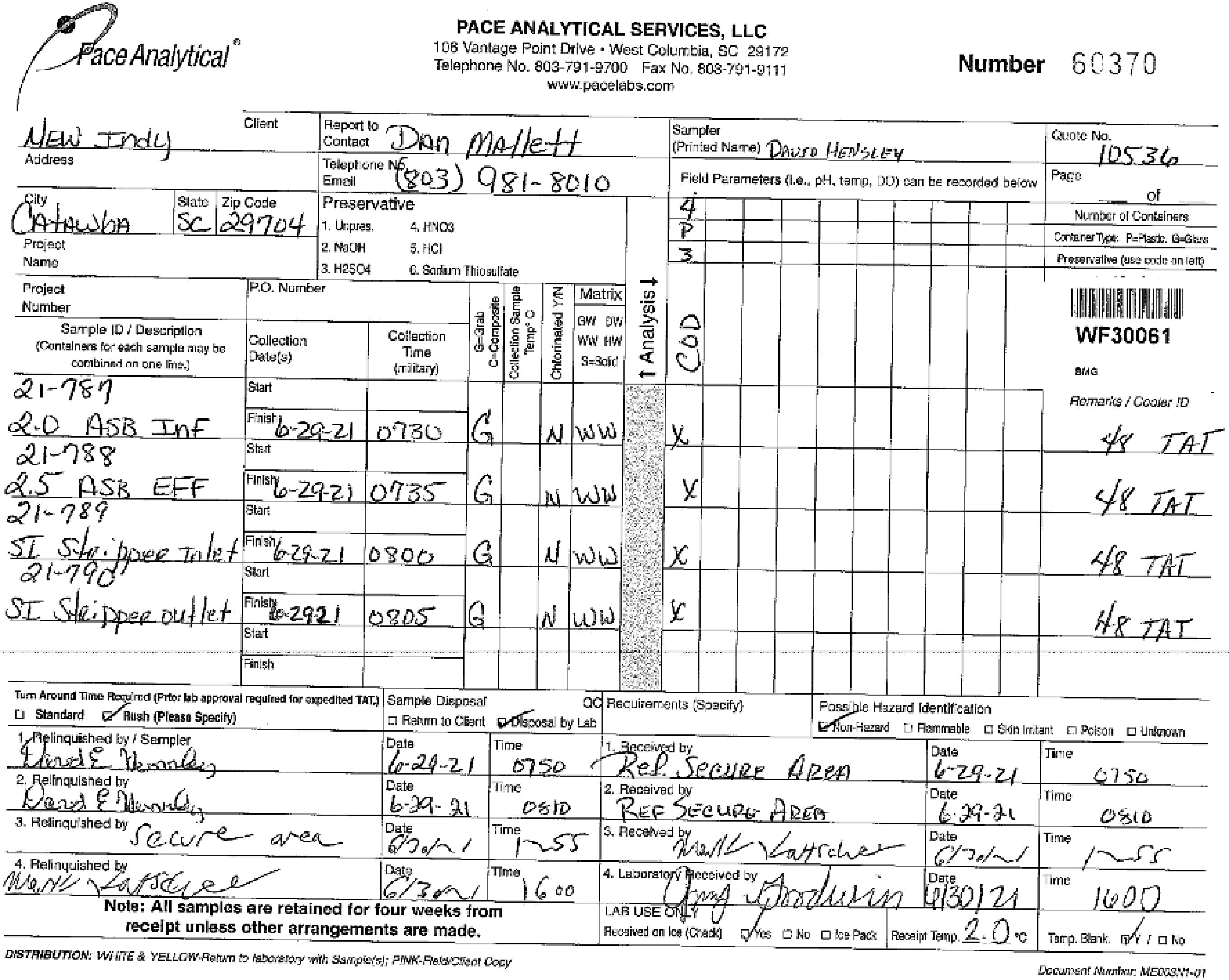
Client: New-Indy Catawba LLC
Laboratory ID: WF30061-004
Description: 21-790 SI STRIPPER OUTLET
Matrix: Aqueous
Date Sampled: 06/29/2021 0805
Project Name: COD Study
Date Received: 06/30/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/01/2021 1702	KFE		97629

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1600		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Chain of Custody
and
Miscellaneous Documents



PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60370

Client: NEW Indy
Address:
City: Catawba State: SC Zip Code: 29704
Project Name:
Project Number:
Report to Contact: Dan Mallett
Telephone No./Email: (803) 981-8010
P.O. Number:
Sampler (Printed Name): David Hensley
Quote No. 105.36
Page of

Preservative
1. Unpres. 4. HNO3
2. NaOH 5. HCl
3. H2SO4 6. Sodium Thiosulfate

Field Parameters (i.e., pH, temp, DO) can be recorded below

Number of Containers: 4
Container Type: P=Plastic, G=Glass: P
Preservative (use code on left): 3

WF30061
BMG

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	↑ Analysis ↓	COD	Remarks / Cooler ID
21-787	Start								
2.0 ASB Inf	Finish 6-29-21	0730	G		N	WW		X	48 TAT
21-788	Start								
2.5 ASB EFF	Finish 6-29-21	0735	G		N	WW		X	48 TAT
21-789	Start								
SI Stripper Inlet	Finish 6-29-21	0800	G		N	WW		X	48 TAT
21-790	Start								
SI Stripper outlet	Finish 6-29-21	0805	G		N	WW		X	48 TAT
	Start								
	Finish								

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☑ Rush (Please Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

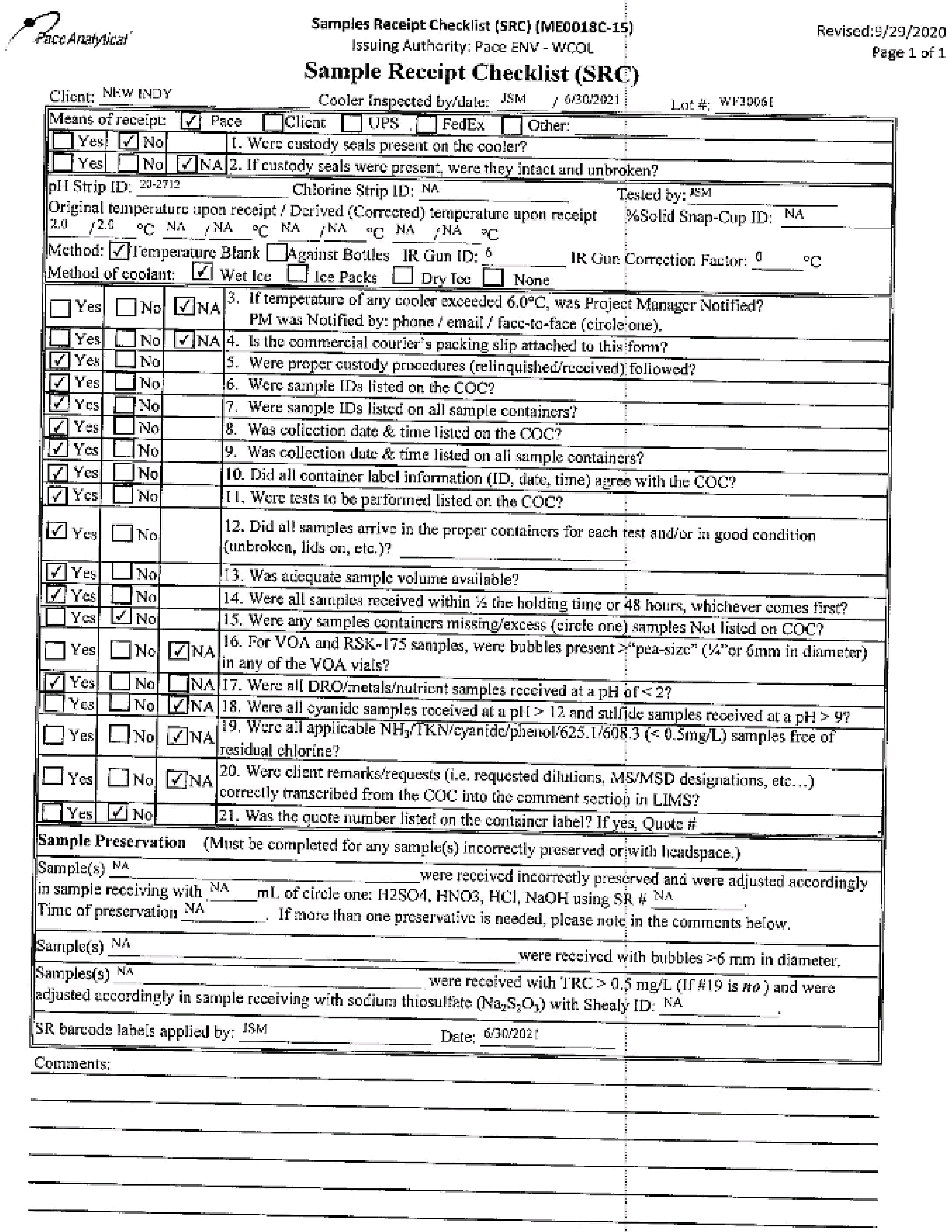
	Date	Time		Date	Time
1. Relinquished by / Sampler: David E Hensley	6-29-21	0750	1. Received by: Ref. Secure Area	6-29-21	0750
2. Relinquished by: David E Hensley	6-29-21	0810	2. Received by: Ref Secure Area	6-29-21	0810
3. Relinquished by: Secure area	6/30/21	1255	3. Received by: Mark Lattcher	6/30/21	1255
4. Relinquished by: Mark Lattcher	6/30/21	1600	4. Laboratory Received by: Amy Goodwin	6/30/21	1600

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☑ Yes ☐ No ☐ Ice Pack Receipt Temp. 2.0 °C Temp. Blank ☑ Y / ☐ No

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N1-01



Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised: 9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW INDY Cooler Inspected by/date: JSM / 6/30/2021 Lot #: WF30061

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes ☑ No 1. Were custody seals present on the cooler?

☐ Yes ☐ No ☑ NA 2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712 Chlorine Strip ID: NA Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.0 / 2.0 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 6/30/2021

Comments:

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Project Name: COD

Lot Number:**WG07086**

Date Completed:07/09/2021

Project Manager:**Blaire M. Gagne**

Hannah K Lucas

07/09/2021 1:52 PM
Approved and released by:
Project Manager I: **Hannah K. Lucas**

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
New-Indy Catawba LLC
Lot Number: WG07086

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary

New-Indy Catawba LLC

Lot Number: WG07086

Project Name: COD

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-825 2.0 ASB INF	Aqueous	07/05/2021 0725	07/07/2021
002	21-826 2.5 ASB EFF	Aqueous	07/05/2021 0730	07/07/2021
003	21-827 SI STRIPPER INLET	Aqueous	07/05/2021 0800	07/07/2021
004	21-828 SI STRIPPER OUTLET	Aqueous	07/05/2021 0805	07/07/2021

(4 samples)

Detection Summary

New-Indy Catawba LLC

Lot Number: WG07086

Project Name: COD

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-825 2.0 ASB INF	Aqueous	COD	SM 5220D-	590		mg/L	5
002	21-826 2.5 ASB EFF	Aqueous	COD	SM 5220D-	510		mg/L	6
003	21-827 SI STRIPPER INLET	Aqueous	COD	SM 5220D-	4600		mg/L	7
004	21-828 SI STRIPPER OUTLET	Aqueous	COD	SM 5220D-	1100		mg/L	8

(4 detections)

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG07086-001
Description: 21-825 2.0 ASB INF
Matrix: Aqueous
Date Sampled: 07/05/2021 0725
Project Name: COD
Date Received: 07/07/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/09/2021 0121	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	590		80	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WG07086-002
Description:	21-826 2.5 ASB EFF	Matrix:	Aqueous
Date Sampled:	07/05/2021 0730	Project Name:	COD
Date Received:	07/07/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	07/09/2021 0122	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	510		40	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG07086-003
Description: 21-827 SI STRIPPER INLET
Matrix: Aqueous
Date Sampled: 07/05/2021 0800
Project Name: COD
Date Received: 07/07/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	07/09/2021 0122	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	4600		200	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

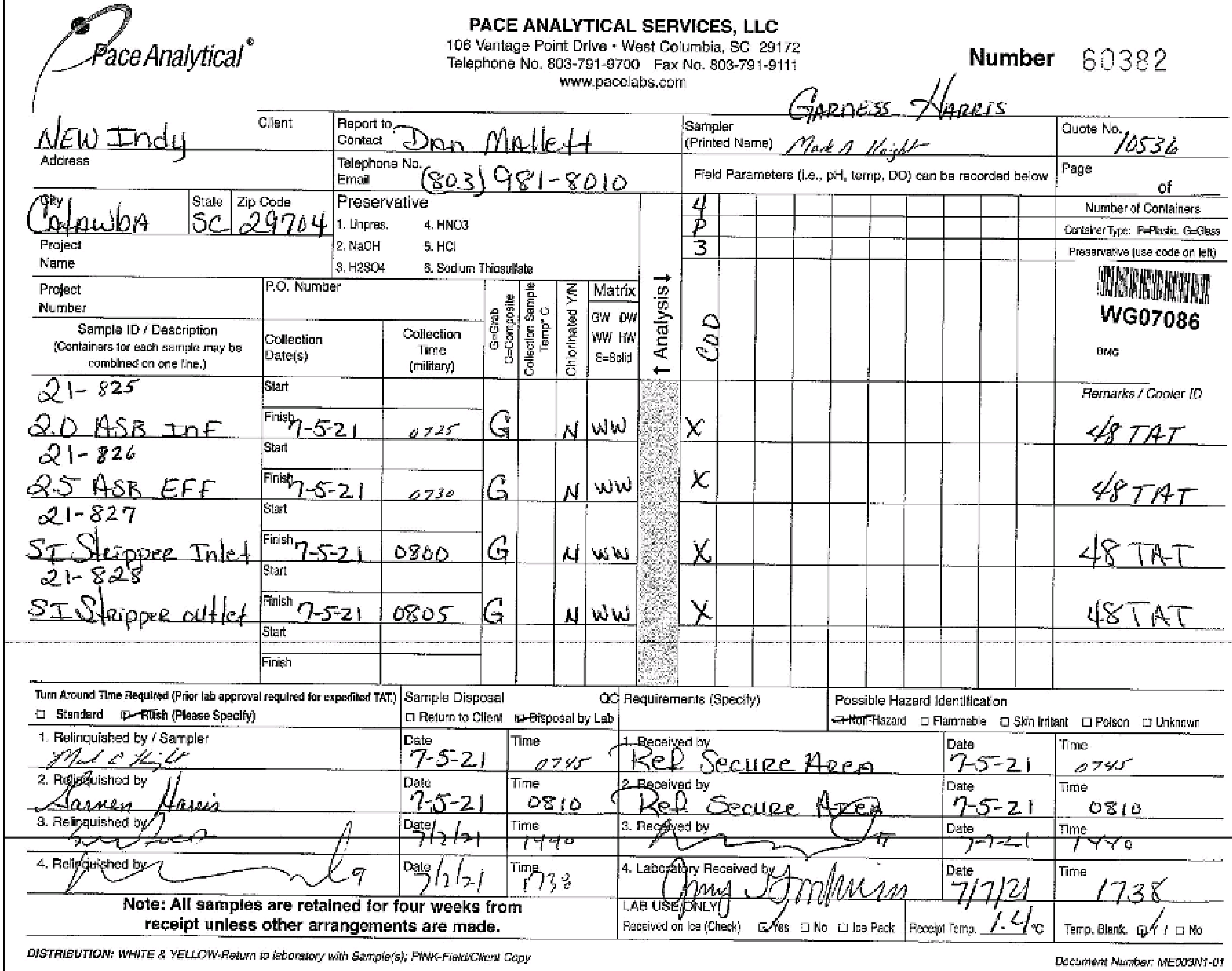
Client: New-Indy Catawba LLC
Laboratory ID: WG07086-004
Description: 21-828 SI STRIPPER OUTLET
Matrix: Aqueous
Date Sampled: 07/05/2021 0805
Project Name: COD
Date Received: 07/07/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/09/2021 0123	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1100		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Chain of Custody
and
Miscellaneous Documents



PACE ANALYTICAL SERVICES, LLC

106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60382

Client: NEW Indy

Address:

City: Catawba State: SC Zip Code: 29704

Project Name:

Project Number:

Report to Contact: Don Mallett

Telephone No. / Email: (803) 981-8010

Sampler (Printed Name): Garness Harris, Mark A Knight

Quote No. 10536

Page of

P.O. Number

Preservative: 1. Unpres. 2. NaOH 3. H2SO4 4. HNO3 5. HCl 6. Sodium Thiosulfate

Field Parameters (i.e., pH, temp, DO) can be recorded below

Number of Containers: 4

Container Type: P=Plastic, G=Glass: P

Preservative (use code on left): 3

WG07086

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	Analysis: COD	Remarks / Cooler ID
21-825 2.0 ASB Inf	Start Finish 7-5-21	0725	G		N	WW	X	48 TAT
21-826 2.5 ASB EFF	Start Finish 7-5-21	0730	G		N	WW	X	48 TAT
21-827 ST Stripper Inlet	Start Finish 7-5-21	0800	G		N	WW	X	48 TAT
21-828 SI Stripper outlet	Start Finish 7-5-21	0805	G		N	WW	X	48 TAT
	Start Finish							

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☒ Rush (Please Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

Relinquished by	Date	Time	Received by	Date	Time
1. Relinquished by / Sampler: Mark Knight	7-5-21	0745	1. Received by: Ref Secure Area	7-5-21	0745
2. Relinquished by: Garnen Harris	7-5-21	0810	2. Received by: Ref Secure Area	7-5-21	0810
3. Relinquished by:	7/7/21	1440	3. Received by:	7-7-21	1440
4. Relinquished by:	7/7/21	1738	4. Laboratory Received by:	7/7/21	1738

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY: Received on Ice (Check) ☒ Yes ☐ No ☐ Ice Pack; Receipt Temp. 1.4 °C; Temp. Blank ☒ Y / ☐ No

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N1-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW INDY Cooler Inspected by/date: JSM / 7/7/2021 Lot #: WG07086

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: ______

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20 2712 Chlorine Strip ID: NA Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

1.4 / 1.4 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ______
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 7/7/2021

Comments:

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Project Name: COD

Lot Number:**WG07087**

Date Completed:07/09/2021

Project Manager:**Blaire M. Gagne**

Hannah K Lucas

07/09/2021 1:53 PM
Approved and released by:
Project Manager I: **Hannah K. Lucas**

Case Narrative
New-Indy Catawba LLC
Lot Number: WG07087

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary
New-Indy Catawba LLC
Lot Number: WG07087
Project Name: COD
Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-833 2.0 ASB INF	Aqueous	07/06/2021 0730	07/07/2021
002	21-834 2.5 ASB EFF	Aqueous	07/06/2021 0735	07/07/2021
003	21-835 SI STRIPPER INLET	Aqueous	07/06/2021 0800	07/07/2021
004	21-836 SI STRIPPER OUTLET	Aqueous	07/06/2021 0805	07/07/2021

(4 samples)

Detection Summary

New-Indy Catawba LLC

Lot Number: WG07087

Project Name: COD

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-833 2.0 ASB INF	Aqueous	COD	SM 5220D-	1000		mg/L	5
002	21-834 2.5 ASB EFF	Aqueous	COD	SM 5220D-	410		mg/L	6
003	21-835 SI STRIPPER INLET	Aqueous	COD	SM 5220D-	8400		mg/L	7
004	21-836 SI STRIPPER OUTLET	Aqueous	COD	SM 5220D-	1200		mg/L	8

(4 detections)

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG07087-001
Description: 21-833 2.0 ASB INF
Matrix: Aqueous
Date Sampled: 07/06/2021 0730
Project Name: COD
Date Received: 07/07/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/09/2021 0123	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1000		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG07087-002
Description: 21-834 2.5 ASB EFF
Matrix: Aqueous
Date Sampled: 07/06/2021 0735
Project Name: COD
Date Received: 07/07/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	07/09/2021 0124	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	410		40	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WG07087-003
Description:	21-835 SI STRIPPER INLET	Matrix:	Aqueous
Date Sampled:	07/06/2021 0800	Project Name:	COD
Date Received:	07/07/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	07/09/2021 0124	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	8400		200	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC		Laboratory ID: WG07087-004	
Description: 21-836 SI STRIPPER OUTLET		Matrix: Aqueous	
Date Sampled: 07/06/2021 0805	Project Name: COD		
Date Received: 07/07/2021	Project Number:		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/09/2021 0125	DAK		98318

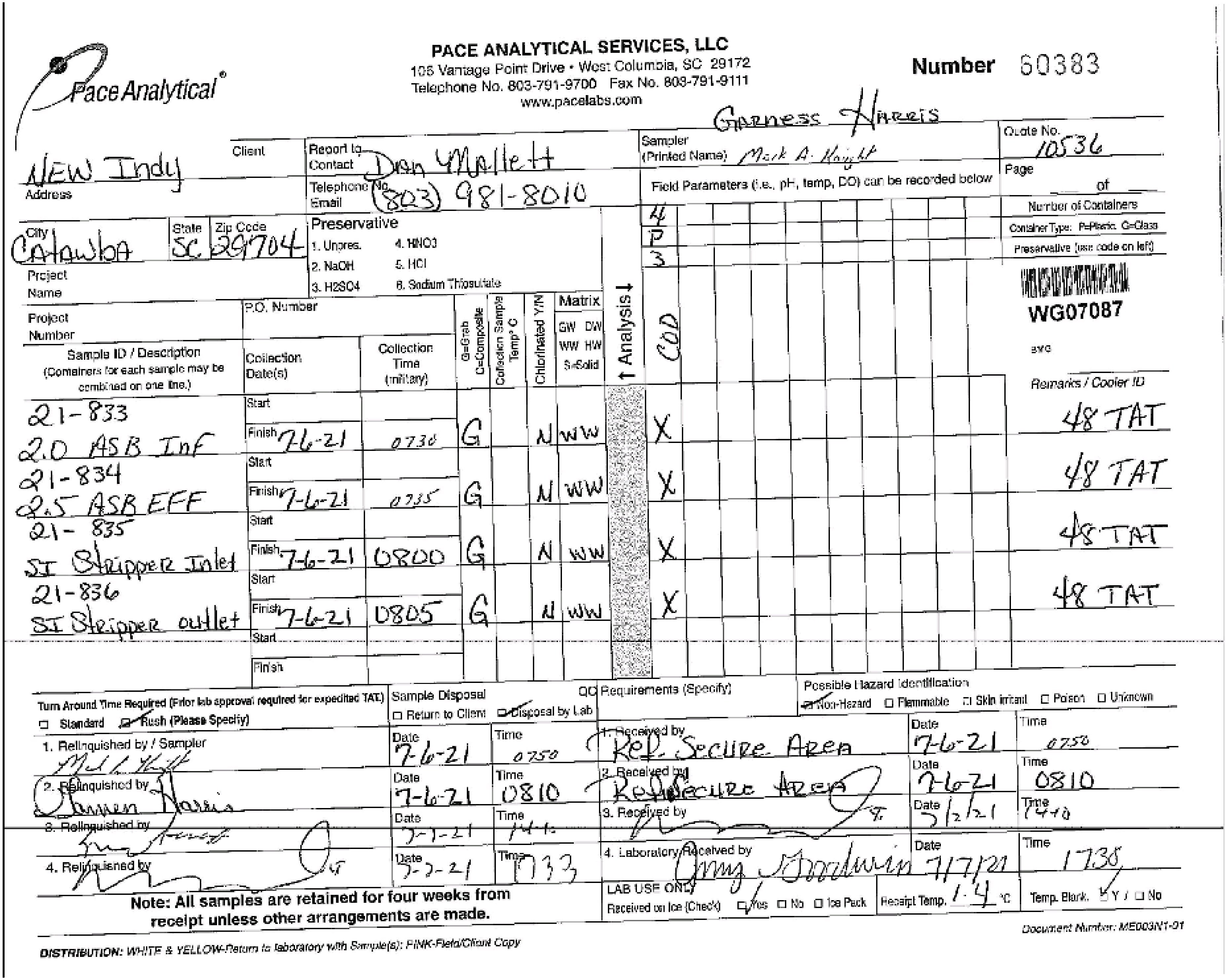
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1200		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Chain of Custody

and

Miscellaneous Documents



Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60383

Garness Harris

Client: NEW Indy
Address:
City: CAtawbA State: SC Zip Code: 29704
Report to Contact: Dan Mallett
Telephone No./Email: (803) 981-8010
Sampler (Printed Name): Mark A. Knight
Quote No. 10536
Page ___ of ___
Project Name:
Project Number:
P.O. Number:

Preservative: 1. Unpres. 2. NaOH 3. H2SO4 4. HNO3 5. HCl 6. Sodium Thiosulfate

Field Parameters (i.e., pH, temp, DO) can be recorded below

Number of Containers: 4
Container Type: P=Plastic G=Glass: P
Preservative (use code on left): 3

WG07087

Analysis: COD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	COD	Remarks / Cooler ID
21-833 2.0 ASB Inf	Start Finish 7-6-21	0730	G		N	WW	X	48 TAT
21-834 2.5 ASB EFF	Start Finish 7-6-21	0735	G		N	WW	X	48 TAT
21-835 SI Stripper Inlet	Start Finish 7-6-21	0800	G		N	WW	X	48 TAT
21-836 SI Stripper outlet	Start Finish 7-6-21	0805	G		N	WW	X	48 TAT
	Start Finish							

Turn Around Time Required (Prior lab approval required for expedited TAT) ☐ Standard ☑ Rush (Please Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

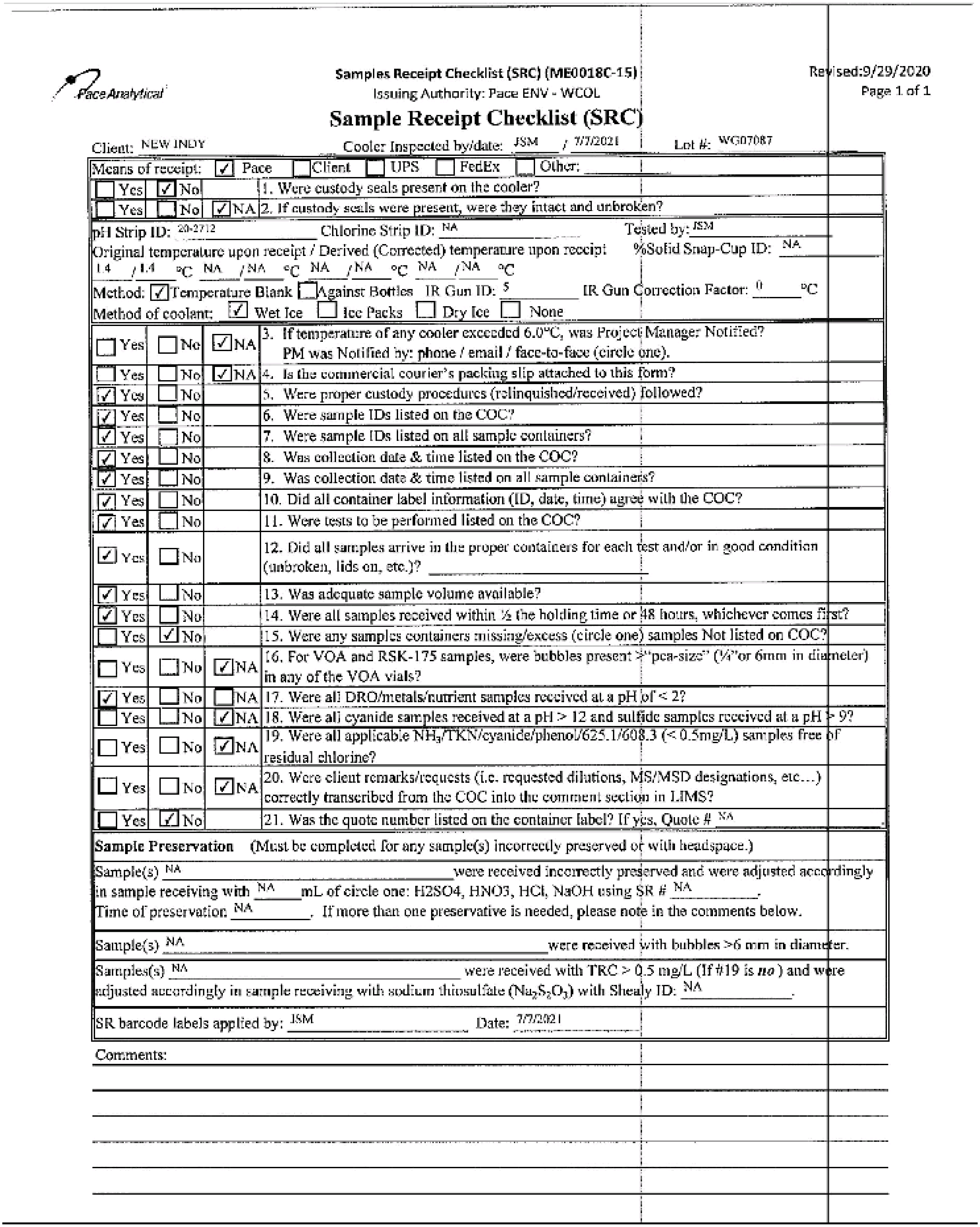
Relinquished by	Date	Time	Received by	Date	Time
1. Relinquished by / Sampler: Mark A. Knight	7-6-21	0750	1. Received by: Ref. Secure Area	7-6-21	0750
2. Relinquished by: Garness Harris	7-6-21	0810	2. Received by: Ref Secure Area	7-6-21	0810
3. Relinquished by	7-1-21	1410	3. Received by	7/2/21	1410
4. Relinquished by	7-2-21	1733	4. Laboratory Received by: Amy Goodwin	7/7/21	1738

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☑ Yes ☐ No ☐ Ice Pack
Receipt Temp. 1.4 °C
Temp. Blank. ☑ Y / ☐ No

Document Number: ME003N1-01

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy



Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW INDY   Cooler Inspected by/date: JSM / 7/7/2021   Lot #: WG07087

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: ______

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712   Chlorine Strip ID: NA   Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt   %Solid Snap-Cup ID: NA

1.4 / 1.4 °C   NA / NA °C   NA / NA °C   NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles   IR Gun ID: 5   IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ______
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM   Date: 7/7/2021

Comments:

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Lot Number:**WG07090**

Date Completed:07/09/2021

Project Manager:**Blaire M. Gagne**

Hannah K Lucas

07/09/2021 1:54 PM
Approved and released by:
Project Manager I: **Hannah K. Lucas**

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
New-Indy Catawba LLC
Lot Number: WG07090

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary

New-Indy Catawba LLC

Lot Number: WG07090

Project Name:

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-846 2.0 ASB INF	Aqueous	07/07/2021 0725	07/07/2021
002	21-847 2.5 ASB EFF	Aqueous	07/07/2021 0730	07/07/2021
003	21-848 SI STRIPPER INLET	Aqueous	07/07/2021 0800	07/07/2021
004	21-849 SI STRIPPER OUTLET	Aqueous	07/07/2021 0805	07/07/2021

(4 samples)

Detection Summary

New-Indy Catawba LLC

Lot Number: WG07090

Project Name:

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-846 2.0 ASB INF	Aqueous	COD	SM 5220D-	700		mg/L	5
002	21-847 2.5 ASB EFF	Aqueous	COD	SM 5220D-	420		mg/L	6
003	21-848 SI STRIPPER INLET	Aqueous	COD	SM 5220D-	5000		mg/L	7
004	21-849 SI STRIPPER OUTLET	Aqueous	COD	SM 5220D-	1200		mg/L	8

(4 detections)

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WG07090-001
Description:	21-846 2.0 ASB INF	Matrix:	Aqueous
Date Sampled:	07/07/2021 0725	Project Name:	
Date Received:	07/07/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/09/2021 0125	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	700		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WG07090-002
Description:	21-847 2.5 ASB EFF	Matrix:	Aqueous
Date Sampled:	07/07/2021 0730	Project Name:	
Date Received:	07/07/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	07/09/2021 0126	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	420		40	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG07090-003
Description: 21-848 SI STRIPPER INLET
Matrix: Aqueous
Date Sampled: 07/07/2021 0800
Project Name:
Date Received: 07/07/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	07/09/2021 0126	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	5000		200	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG07090-004
Description: 21-849 SI STRIPPER OUTLET
Matrix: Aqueous
Date Sampled: 07/07/2021 0805
Project Name:
Date Received: 07/07/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/09/2021 0127	DAK		98318

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1200		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60387

Client: NEW Indy
Address:
City: Catawba State: SC Zip Code: 29704
Project Name:
Project Number:
P.O. Number:

Report to Contact: Dan Mallett
Telephone No. / Email: (803) 981-8010

Preservative: 1. Unpres. 2. NaOH 3. H2SO4 4. HNO3 5. HCl 6. Sodium Thiosulfate

Sampler (Printed Name): Garness Harris / DAVID E HENSLEY

Quote No. 10536
Page ___ of ___

Field Parameters (i.e., pH, temp, DO) can be recorded below

Sample ID / Description (Containers for each sample may be combined on one line.)		Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	↑ Analysis ↓	COD	Remarks / Cooler ID
Number of Containers									4	
Container Type: P=Plastic, G=Glass									P	
Preservative (use code on left)									3	WG07090
21-846	Start									
2.0 ASR INF	Finish	7-7-21	0725	G		N	WW		X	48 TAT
21-847	Start									
2.5 ASB EFF	Finish	7-7-21	0730	G		N	WW		X	48 TAT
21-848	Start									
SI Stripper Inlet	Finish	7-7-21	0800	G		N	WW		X	48 TAT
21-849	Start									
SI Stripper Outlet	Finish	7-7-21	0805	G		N	WW		X	48 TAT
	Start									
	Finish									

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☑ Rush (Please Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

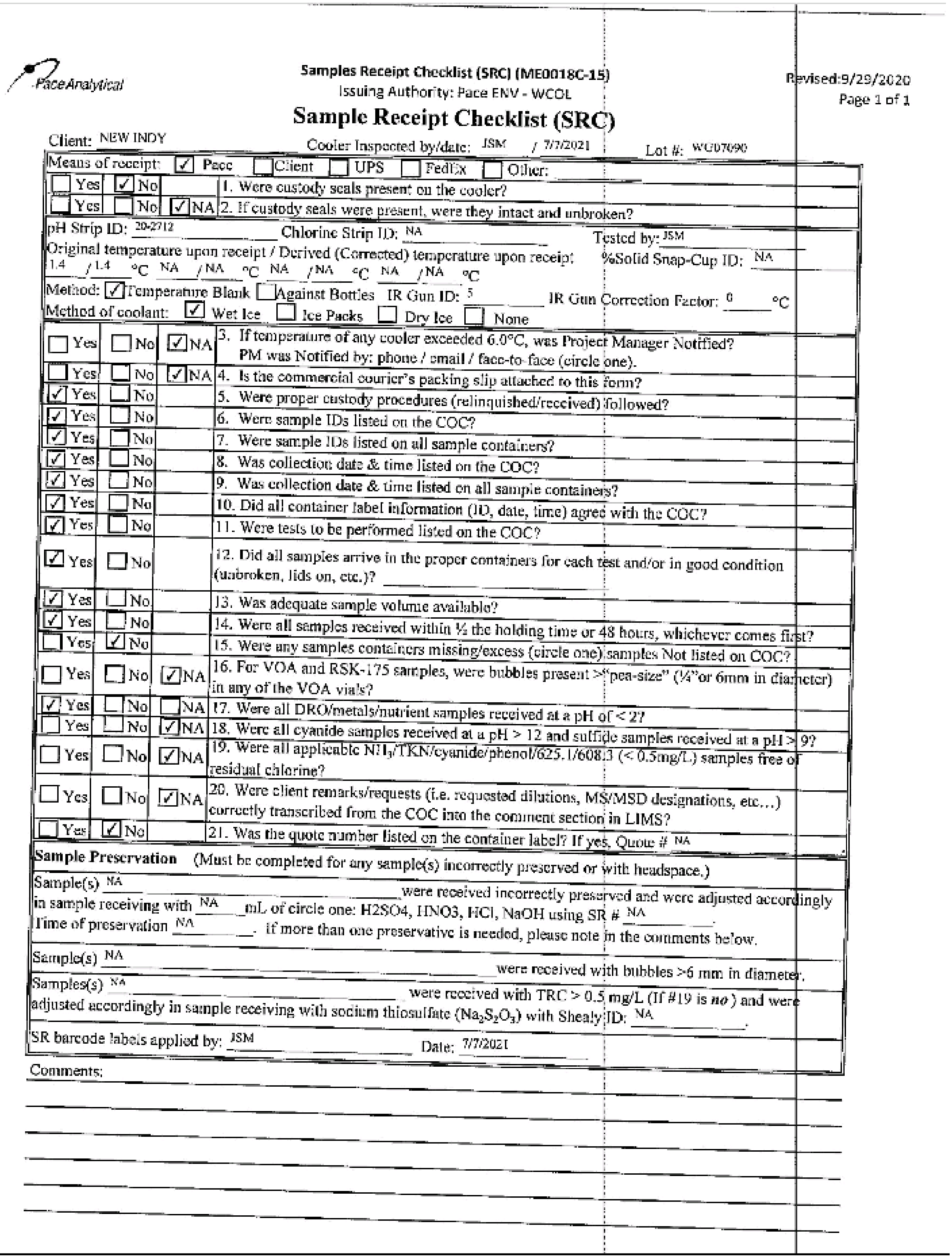
	Date	Time		Date	Time
1. Relinquished by / Sampler David E Hensley	7-7-21	0750	1. Received by Ref. Secure Area	7-7-21	0750
2. Relinquished by Garness Harris	7-7-21	0810	2. Received by Ref. Secure Area	7-7-21	0810
3. Relinquished by	7-7-21	1440	3. Received by	7-7-21	1440
4. Relinquished by	7-7-21	1733	4. Laboratory Received by Amy Goodwin	7/7/21	1738

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☑ Yes ☐ No ☐ Ice Pack Receipt Temp. 1.4 °C Temp. Blank ☑ Y / ☐ No

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N1-01



PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW INDY
Cooler Inspected by/date: JSM / 7/7/2021
Lot #: WG07090

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: ____

☐ Yes ☑ No 1. Were custody seals present on the cooler?

☐ Yes ☐ No ☑ NA 2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712 Chlorine Strip ID: NA Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

1.4 / 1.4 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes ☐ No ☑ NA 3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).

☐ Yes ☐ No ☑ NA 4. Is the commercial courier's packing slip attached to this form?

☑ Yes ☐ No 5. Were proper custody procedures (relinquished/received) followed?

☑ Yes ☐ No 6. Were sample IDs listed on the COC?

☑ Yes ☐ No 7. Were sample IDs listed on all sample containers?

☑ Yes ☐ No 8. Was collection date & time listed on the COC?

☑ Yes ☐ No 9. Was collection date & time listed on all sample containers?

☑ Yes ☐ No 10. Did all container label information (ID, date, time) agree with the COC?

☑ Yes ☐ No 11. Were tests to be performed listed on the COC?

☑ Yes ☐ No 12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ____

☑ Yes ☐ No 13. Was adequate sample volume available?

☑ Yes ☐ No 14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?

☐ Yes ☑ No 15. Were any samples containers missing/excess (circle one) samples Not listed on COC?

☐ Yes ☐ No ☑ NA 16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?

☑ Yes ☐ No ☐ NA 17. Were all DRO/metals/nutrient samples received at a pH of < 2?

☐ Yes ☐ No ☑ NA 18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?

☐ Yes ☐ No ☑ NA 19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?

☐ Yes ☐ No ☑ NA 20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

☐ Yes ☑ No 21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 7/7/2021

Comments:

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Project Name: COD Study

Lot Number:**WG09052**

Date Completed:07/13/2021

Blaire Gagne

07/13/2021 3:46 PM
Approved and released by:
Project Manager I: **Blaire M. Gagne**

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
New-Indy Catawba LLC
Lot Number: WG09052

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

PACE ANALYTICAL SERVICES, LLC

Sample Summary

New-Indy Catawba LLC

Lot Number: WG09052

Project Name: COD Study

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-854 2.0 ASB INF	Aqueous	07/08/2021 0720	07/09/2021
002	21-855 2.5 ASB EFF	Aqueous	07/08/2021 0725	07/09/2021
003	21-856 SI Stripper Inlet	Aqueous	07/08/2021 0800	07/09/2021
004	21-857 SI Stripper Outlet	Aqueous	07/08/2021 0805	07/09/2021

(4 samples)

PACE ANALYTICAL SERVICES, LLC

Detection Summary

New-Indy Catawba LLC

Lot Number: WG09052

Project Name: COD Study

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-854 2.0 ASB INF	Aqueous	COD	SM 5220D-	900		mg/L	5
002	21-855 2.5 ASB EFF	Aqueous	COD	SM 5220D-	440		mg/L	6
003	21-856 SI Stripper Inlet	Aqueous	COD	SM 5220D-	5900		mg/L	7
004	21-857 SI Stripper Outlet	Aqueous	COD	SM 5220D-	1700		mg/L	8

(4 detections)

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG09052-001
Description: 21-854 2.0 ASB INF
Matrix: Aqueous
Date Sampled: 07/08/2021 0720
Project Name: COD Study
Date Received: 07/09/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/10/2021 1159	DAK		98453

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	900		80	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG09052-002
Description: 21-855 2.5 ASB EFF
Matrix: Aqueous
Date Sampled: 07/08/2021 0725
Project Name: COD Study
Date Received: 07/09/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	2	07/10/2021 1200	DAK		98453

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	440		40	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WG09052-003
Description:	21-856 SI Stripper Inlet	Matrix:	Aqueous
Date Sampled:	07/08/2021 0800	Project Name:	COD Study
Date Received:	07/09/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	07/10/2021 1201	DAK		98453

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	5900		200	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WG09052-004
Description:	21-857 SI Stripper Outlet	Matrix:	Aqueous
Date Sampled:	07/08/2021 0805	Project Name:	COD Study
Date Received:	07/09/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/10/2021 1202	DAK		98453

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	1700		80	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60391

Client: New Indy
Address:
City: Catawba State: SC Zip Code: 29704
Project Name:
Project Number:
Report to Contact: Dan Mallett
Telephone No./Email: (803) 981-8010
Sampler (Printed Name): Garness Harris / David E Hensley
Quote No.: 10536
Page ___ of ___
P.O. Number:

Preservative:
1. Unpres. 4. HNO3
2. NaOH 5. HCl
3. H2SO4 6. Sodium Thiosulfate

Field Parameters (i.e., pH, temp, DO) can be recorded below

Number of Containers: 4
Container Type: P=Plastic, G=Glass: P
Preservative (use code on left): 3

↑ Analysis ↓: COD

WG09052

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	COD	Remarks / Cooler ID
21-854 2.0 ASB Inf	Start Finish 7-8-21	0720	G		N	WW	X	48 TAT
21-855 2.5 ASB EFF	Start Finish 7-8-21	0725	G		N	WW	X	48 TAT
21-856 SI Stripper Inlet	Start Finish 7-8-21	0800	G		N	WW	X	48 TAT
21-857 SI Stripper outlet	Start Finish 7-8-21	0805	G		N	WW	X	48 TAT
	Start Finish							

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☑ Rush (Please Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

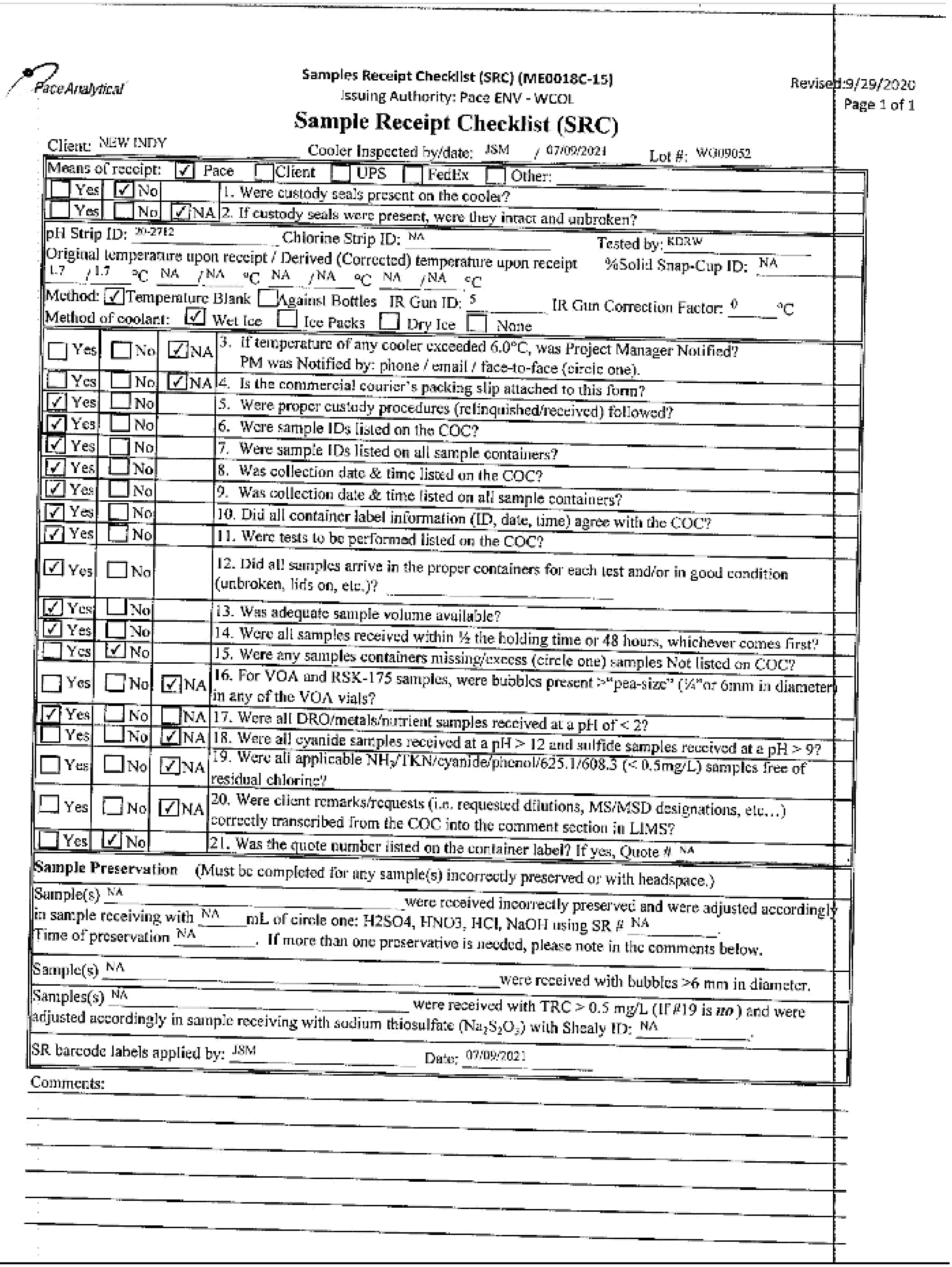
	Date	Time		Date	Time
1. Relinquished by / Sampler: David E Hensley	7-8-21	0740	1. Received by: Ref. Secure Area	7-8-21	0740
2. Relinquished by: Garness Harris	7-8-21	0810	2. Received by: Ref Secure Area	7-8-21	0810
3. Relinquished by	7-9-21	1337	3. Received by	7-9-21	1337
4. Relinquished by	7-9-21	1630	4. Laboratory Received by	7/9/21	1600

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☑ Yes ☐ No ☐ Ice Pack Receipt Temp. 1 °C Temp. Blank. ☑ Y / ☐ No

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N1-01



Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW INDY Cooler Inspected by/date: JSM / 07/09/2021 Lot #: WG09052

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712 Chlorine Strip ID: NA Tested by: KDRW

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

1.7 / 1.7 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 07/09/2021

Comments:

Report of Analysis

New-Indy Catawba LLC
5300 Cureton Ferry Road
Catawba, SC 29704
Attention: Dan Mallett

Project Name: COD Study

Lot Number:**WG09053**

Date Completed:07/13/2021

07/13/2021 3:47 PM
Approved and released by:
Project Manager I: **Blaire M. Gagne**

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
New-Indy Catawba LLC
Lot Number: WG09053

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

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If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary

New-Indy Catawba LLC

Lot Number: WG09053

Project Name: COD Study

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	21-862 2.0 ASB INF	Aqueous	07/09/2021 0720	07/09/2021
002	21-863 SI Stripper Inlet	Aqueous	07/09/2021 0800	07/09/2021

(2 samples)

PACE ANALYTICAL SERVICES, LLC

Detection Summary

New-Indy Catawba LLC

Lot Number: WG09053

Project Name: COD Study

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	21-862 2.0 ASB INF	Aqueous	COD	SM 5220D-	2400		mg/L	5
002	21-863 SI Stripper Inlet	Aqueous	COD	SM 5220D-	5500		mg/L	6

(2 detections)

Inorganic non-metals

Client:	New-Indy Catawba LLC	Laboratory ID:	WG09053-001
Description:	21-862 2.0 ASB INF	Matrix:	Aqueous
Date Sampled:	07/09/2021 0720	Project Name:	COD Study
Date Received:	07/09/2021	Project Number:	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	4	07/10/2021 1202	DAK		98453

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	2400		80	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

Inorganic non-metals

Client: New-Indy Catawba LLC
Laboratory ID: WG09053-002
Description: 21-863 SI Stripper Inlet
Matrix: Aqueous
Date Sampled: 07/09/2021 0800
Project Name: COD Study
Date Received: 07/09/2021
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(COD) SM 5220D-2011	10	07/10/2021 1203	DAK		98453

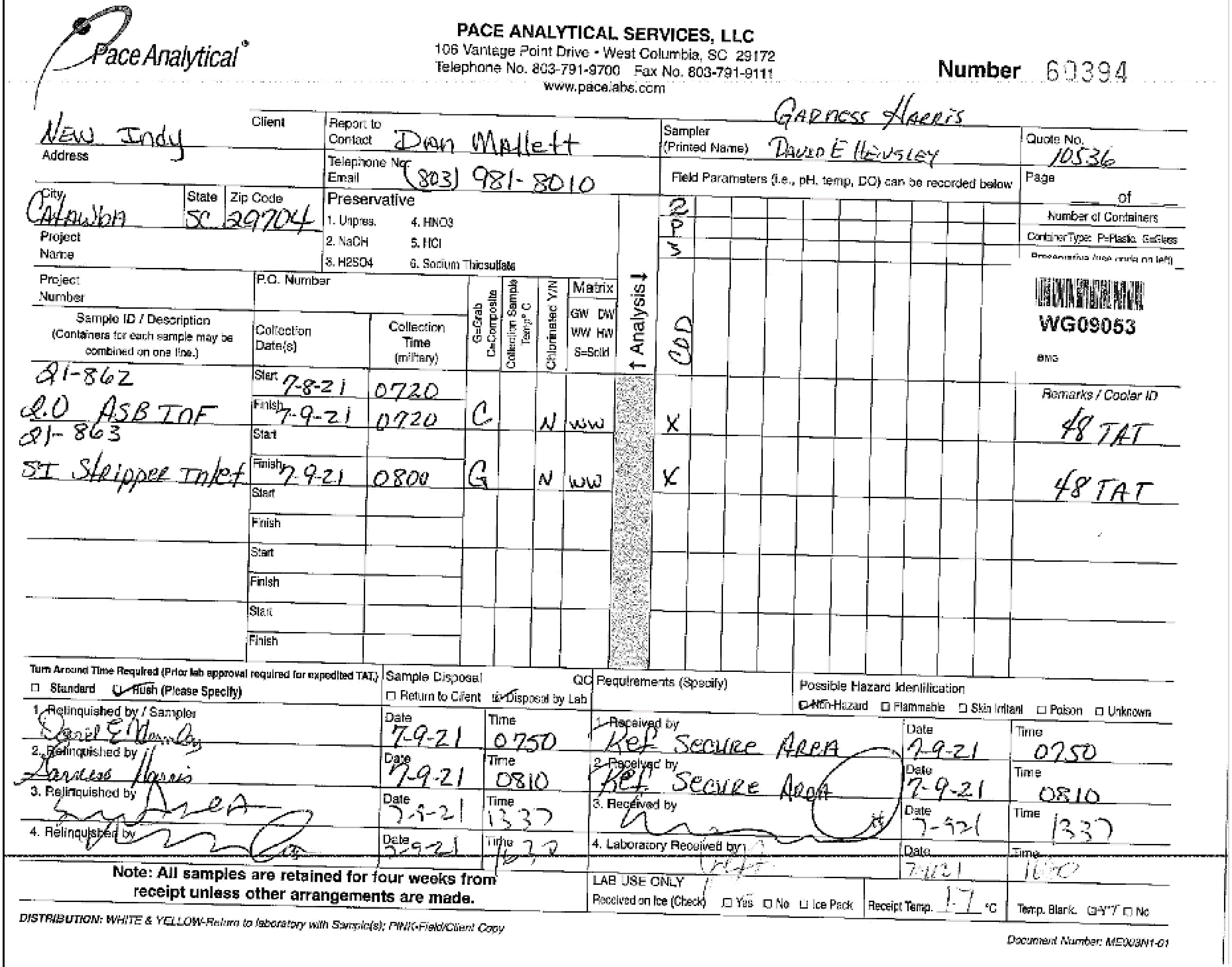
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
COD		SM 5220D-2011	5500		200	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Chain of Custody

and

Miscellaneous Documents



PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 60394

Client: NEW Indy
Address
City: Catawba State: SC Zip Code: 29704
Project Name
Project Number
Report to Contact: Dan Mallett
Telephone No / Email: (803) 981-8010
Sampler (Printed Name): Garness Harris / David E Hensley
Quote No. 10536
Page ___ of ___
P.O. Number

Preservative: 1. Unpres. 2. NaOH 3. H2SO4 4. HNO3 5. HCl 6. Sodium Thiosulfate

Field Parameters (i.e., pH, temp, DO) can be recorded below

Number of Containers
Container Type: P=Plastic G=Glass
Preservative (use code on left)

WG09053

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (military)	G=Grab C=Composite	Collection Sample Temp° C	Chlorinated Y/N	Matrix GW DW WW HW S=Solid	↑ Analysis ↓ 2 P W COD	Remarks / Cooler ID
21-862	Start 7-8-21	0720						
2.0 ASB IOF	Finish 7-9-21	0720	C		N	WW	X	48 TAT
21-863	Start							
SI Stripper Inlet	Finish 7-9-21	0800	G		N	WW	X	48 TAT
	Start							
	Finish							
	Start							
	Finish							
	Start							
	Finish							

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☑ Rush (Please Specify)
Sample Disposal ☐ Return to Client ☑ Disposal by Lab
QC Requirements (Specify)
Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

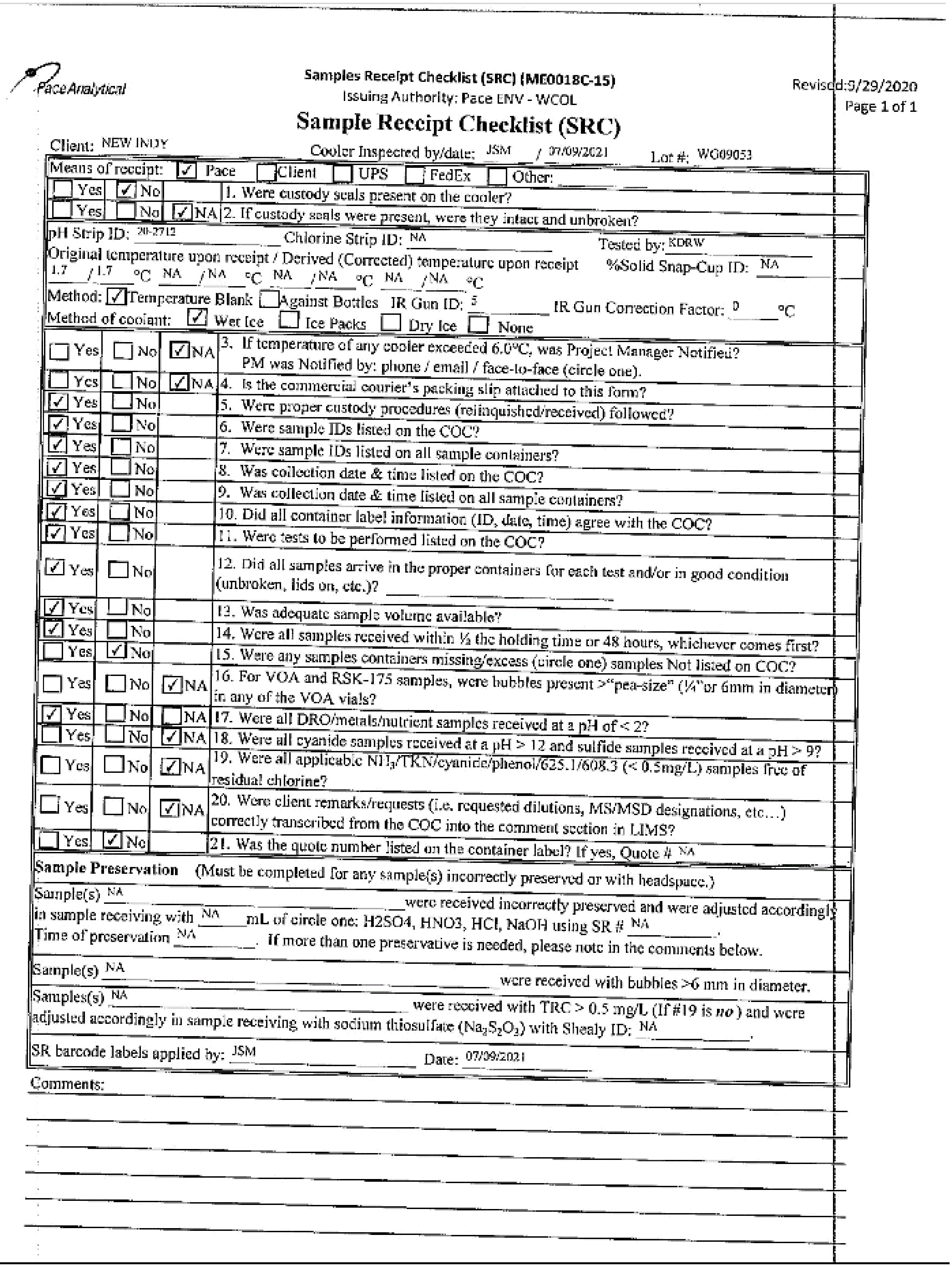
	Date	Time		Date	Time
1. Relinquished by / Sampler: Daniel E Hensley	7-9-21	0750	1. Received by: Ref Secure Area	7-9-21	0750
2. Relinquished by: Garness Harris	7-9-21	0810	2. Received by: Ref Secure Area	7-9-21	0810
3. Relinquished by	7-9-21	1337	3. Received by	7-9-21	1337
4. Relinquished by	7-9-21	1632	4. Laboratory Received by	7-12-21	1000

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☐ Yes ☐ No ☐ Ice Pack
Receipt Temp. 1.7 °C
Temp. Blank ☐ Yes ☐ No

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N1-01



PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:5/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: NEW INDY
Cooler Inspected by/date: JSM / 07/09/2021 Lot #: WG09053

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: ______

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 20-2712 Chlorine Strip ID: NA Tested by: KDRW

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

1.7 / 1.7 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ______
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 07/09/2021

Comments:

NEW-INDY CATAWBA FIELD DATA SHEETS AND BENCH SHEETS – PH, TEMPERATURE, DISSOLVED OXYGEN, SULFIDES, AND BOD

SAMPLE DATE 7/8/21 1100 HRS – 7/9/21 1100 HRS

BOD Testing, Standard Methods 5210 B-2011, 22nd edition; DO, 4500-0 G-2011 Membrane Electrode Method

Date In 7/9/2021 Time 1530 Tech MK
Date Out 7/14/2021 Time 1430 Tech MK

Sample Code 21-883
Sample Location ASB Eff 2.5
Conductivity
Bar. Press. 748/755

Run triplicate blanks

BLANK / DILUTION WATER - Quality of BOD Dilution Water

Bottle #	Initial DO (must be 7.5 - 9.0)	Initial Temp °C (17-23°)	Final DO	Final Temp °C (17-23°)	Depletion (must be < 0.20 mgl)	
1	8.54	20.3	8.48	19.6	0.06	Average
2	8.54	20.3	8.48	19.6	0.06	
3	8.57	20.3	8.52	19.6	0.05	0.06

Discard all data for tests using this water if average > 0.20 mg/l

Nutrient		
Expiration		
DEC.2024	NOV.2024	

	Initial	Final	ml. / Norm.
pH (6.0 to 8.0)	7.4		
(H_2SO_4)			
(NaOH)			
Temp °C (17 - 23°)	20.8	19.5	Cross Check QC Tests
Chart DO	8.88	9.20	
Air DO	8.79	9.11	

IF pH is not 6 - 8 then adjust to 7.0 - 7.2

Run triplicate seed dilutions

CONTROL / SEED + DILUTION WATER - Seed Control Factor (SCF) POLYSEED Expiration 2/22

Quantity of seed used in final "live" seed control test, ml	4.0	*Note: This can vary from 2 to 6 ml*
Quantity of BOD water used as dilution in this test, ml	300	*Note: This should not vary*

Bottle #	Volume of seed added to each bottle - ml	Initial DO on day 1 (at 17 - 23°C)	Initial Temp °C (17-23°)	Final DO on day 5 (at 17 - 23°C)	Final Temp °C (17-23°)	DO Depletion over a 5 day period	f factor calculation using 4 ml of seed in live sample	Seed Correction Factor (SCF). This is the DO depletion imposed by the seed and must be subtracted in the final calculations	Choose seed correction in the range 0.6 - 1.0 mg/L. Use only the average of those chosen	Seed Correction Factors must be +/-30%
#	(at 17 - 23°C)	B1		B2		(B1-B2)	4 mL seed	(B1-B2)f		
4	15	8.54	20.3	6.24	19.6	2.30	0.27	0.613		-2.1
5	20	8.54	20.3	5.39	19.6	3.15	0.20	0.630		0.6
6	25	8.54	20.3	4.57	19.6	3.97	0.16	0.635	Average SCF (manual calculation)	1.4
									0.6262	

Choose depletion in the range 2-6mL

Run triplicate GGA standards

CONTROL : GLUCOSE/GLUTAMIC ACID STANDARD GGA Standard Expiration Date 2/13/2022

Description	Bottle #	GGA - mls of 300 ppm GGA solution used	Seed - mls of seed solution used	Initial DO <= 9.2 (at 17 - 23°C)	Final DO (at 17 - 23°C)	Depletion	SCF	Net Depletion	% Net Depletion	Dil. Factor	BOD	
GGA STD	7	6.0	4.0	8.52	4.24	4.28	0.626	3.65	42.9%	0.020	183	Average GGA
GGA STD	8	6.0	4.0	8.51	4.30	4.21	0.626	3.58	42.1%	0.020	179	
GGA STD	9	6.0	4.0	8.52	4.02	4.50	0.626	3.87	45.5%	0.020	194	185
					must be > 1 mg/L	must be > 2 mg/L						Must calc to (198 ± 30.5)

Run duplicates for each of the three dilutions

SAMPLES : BOD^5 of the live sample

Seed Control Factor (B1-B2)f: 0.626

Description	Bottle #	Sample Volume (mL) (17 - 23°C)	Seed Volume (mL)	Initial DO D1	Initial Temp °C (17-23°)	Final DO (at 17 - 23°C) D2	Final Temp °C (17-23°)	Depletion (D1-D2)	Net Depletion (D1-D2) - (B1-B2)f	Dil. Factor P	Sample BOD [(D1-D2)-(B1-B2)f]/P	
2.5	18	20	4.0	8.35	20.3	6.58	19.5	1.77	1.14	0.067		Average BOD^5
2.5	19	25	4.0	8.29	20.3	6.06	19.5	2.23	1.60	0.083	19.25	
2.5	20	30	4.0	8.24	20.3	6.01	19.5	2.23	1.60	0.100	16.04	17.6
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		
												#DIV/0!
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		Average BOD^5
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		
										0.000		
				must be 7.0-9.0 mg/L		must be > 1.0mg/L		must be > 2.0 mg/L				

Incubation Temperature 20 ± 1°C
Incubation Time = 5 days +/- 6 hours

Rev. Date: 1/9/2019

SAMPLE DATE 7/9/21 1100 HRS – 7/10/21 1100 HRS

BOD Testing, Standard Methods 5210 B-2011, 22nd edition; DO, 4500-0 G-2011 Membrane Electrode Method

Date In 7/10/2021 Time 1330 Tech MK
Date Out 7/15/2021 Time 1300 Tech MK

Sample Code 21-884
Sample Location ASB Eff 2.5
Conductivity
Bar. Press. 748/753

Run triplicate blanks

BLANK / DILUTION WATER - Quality of BOD Dilution Water						
Bottle #	Initial DO (must be 7.5 - 9.0)	Initial Temp °C (17-23°)	Final DO	Final °C Temp (17-23°)	Depletion (must be < 0.20 mgl)	
1	8.45	20.0	8.31	20.1	0.14	Average
2	8.46	20.0	8.36	20.1	0.10	
3	8.49	20.0	8.39	20.1	0.10	0.11

Discard all data for tests using this water if average > 0.20 mg/l

		Initial	Final	ml. / Norm.
Nutrient	pH (6.0 to 8.0)	7.5		
Expiration	(H_2SO_4)			
DEC.2024 NOV.2024	(NaOH)			
	Temp °C (17 - 23°)	20.0	20.3	Cross Check QC Tests
	Chart DO	9.05	9.03	
	Air DO	8.96	8.96	

IF pH is not 6 - 8 then adjust to 7.0 - 7.2

Run triplicate seed dilutions

CONTROL / SEED + DILUTION WATER - Seed Control Factor (SCF) POLYSEED Expiration 2/22

Quantity of seed used in final "live" seed control test, ml	4.0	*Note: This can vary from 2 to 6 ml*
Quantity of BOD water used as dilution in this test, ml	300	*Note: This should not vary*

Bottle #	Volume of seed added to each bottle - ml	Initial DO on day 1 (at 17 - 23°C)	Initial Temp °C (17-23°)	Final DO on day 5 (at 17 - 23°C)	Final Temp °C (17-23°)	DO Depletion over a 5 day period	f factor calculation using 4 ml of seed in live sample	Seed Correction Factor (SCF). This is the DO depletion imposed by the seed and must be subtracted in the final calculations	Choose seed correction in the range 0.6 - 1.0 mg/L. Use only the average of those chosen	Seed Correction Factors must be +/-30%
#	(at 17 - 23°C)	B1		B2		(B1-B2)	4 mL seed	(B1-B2)f		
4	15	8.51	20.0	5.71	20.0	2.80	0.27	0.747		3.0
5	20	8.51	20.0	4.92	20.0	3.59	0.20	0.718		-1.0
6	25	8.49	20.0	4.05	20.0	4.44	0.16	0.710	Average SCF (manual calculation)	-2.0
						Choose depletion in the range 2-6mL			0.7250	

Run triplicate GGA standards

CONTROL : GLUCOSE/GLUTAMIC ACID STANDARD				GGA Standard Expiration Date				2/13/2022			
Description	Bottle #	GGA - mls of 300 ppm GGA solution used	Seed - mls of seed solution used	Initial DO <= 9.2 (at 17 - 23°C)	Final DO (at 17 - 23°C)	Depletion	SCF	Net Depletion	% Net Depletion	Dil. Factor	BOD	
GGA STD	7	6.0	4.0	8.45	4.16	4.29	0.725	3.56	42.2%	0.020	178	Average GGA
GGA STD	8	6.0	4.0	8.46	4.27	4.19	0.725	3.46	41.0%	0.020	173	
GGA STD	9	6.0	4.0	8.46	3.84	4.62	0.725	3.89	46.0%	0.020	195	182
					must be > 1 mg/L	must be > 2 mg/L						Must calc to (198 ± 30.5)

Run duplicates for each of the three dilutions

SAMPLES : BOD^5 of the live sample

Seed Control Factor (B1-B2)f: 0.725

Description	Bottle #	Sample Volume (mL) (17 - 23°C)	Seed Volume (mL)	Initial DO	Initial Temp °C (17-23°)	Final DO (at 17 - 23°C)	Final Temp °C (17-23°)	Depletion (D1-D2)	Net Depletion (D1-D2) - (B1-B2)f	Dil. Factor P	Sample BOD [(D1-D2)-(B1-B2)f]/P	
				D1		D2						
2.5	10	20	4.0	8.28	20.0	6.48	19.8	1.80	1.07	0.067		Average BOD^5
2.5	11	25	4.0	8.21	20.0	6.16	19.8	2.05	1.32	0.083	15.90	
2.5	12	30	4.0	8.13	20.0	5.92	19.8	2.21	1.48	0.100	14.85	15.4
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		
												#DIV/0!
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		Average BOD^5
			4.0							0.000		
			4.0							0.000		
										0.000		
				must be 7.0-9.0 mg/L		must be > 1.0mg/L		must be > 2.0 mg/L				

Incubation Temperature 20 ± 1° C
Incubation Time = 5 days +/- 6 hours

Rev. Date: 1/9/2019

SAMPLE DATE 7/10/21 1100 HRS - 7/11/21 1100 HRS

BOD Testing, Standard Methods 5210 B-2011, 22nd edition; DO, 4500-0 G-2011 Membrane Electrode Method

Date In	7/11/2021	Time	1330	Tech	MK
Date Out	7/16/2021	Time	1400	Tech	MK

Sample Code	21-896	Bar. Press.
Sample Location	ASB Eff 2.5	749/751
Conductivity		

Run triplicate blanks

BLANK / DILUTION WATER - Quality of BOD Dilution Water

Bottle #	Initial DO (must be 7.5 - 9.0)	Initial Temp °C (17-23°)	Final DO	Final °C	Temp (17-23°)	Depletion (must be < 0.20 mgl)	Average
13	8.63	19.8	8.55		19.8	0.08	
14	8.63	19.8	8.58		19.8	0.05	
15	8.66	19.8	8.60		19.8	0.06	0.06

Discard all data for tests using this water if average > 0.20 mg/l

Nutrient			Initial	Final	ml. / Norm.
		pH (6.0 to 8.0)	7.5		
Expiration		(H_2SO_4)			
DEC.2024	NOV.2024	(NaOH)			
		Temp °C (17 - 23°)	19.8	19.9	Cross Check QC Tests
		Chart DO	9.05	9.05	
		Air DO	9.00	9.00	

IF pH is not 6 - 8 then adjust to 7.0 - 7.2

Run triplicate seed dilutions

CONTROL / SEED + DILUTION WATER - Seed Control Factor (SCF) POLYSEED Expiration 2/22

Quantity of seed used in final "live" seed control test, ml	4.0	*Note: This can vary from 2 to 6 ml*
Quantity of BOD water used as dilution in this test, ml	300	*Note: This should not vary*

Bottle #	Volume of seed added to each bottle - ml	Initial DO on day 1 (at 17 - 23°C)	Initial Temp °C (17-23°)	Final DO on day 5 (at 17 - 23°C)	Final Temp °C (17-23°)	DO Depletion over a 5 day period	f factor calculation using 4 ml of seed in live sample	Seed Correction Factor (SCF). This is the DO depletion imposed by the seed and must be subtracted in the final calculations	Choose seed correction in the range 0.6 - 1.0 mg/L. Use only the average of those chosen	Seed Correction Factors must be +/-30%
#	(at 17 - 23°C)	B1		B2		(B1-B2)	4 mL seed	(B1-B2)f		
16	15	8.64	19.8	6.01	19.7	2.63	0.27	0.701		-3.5
17	20	8.62	19.8	4.93	19.7	3.69	0.20	0.738		1.6
18	25	8.64	19.8	4.01	19.7	4.63	0.16	0.741	Average SCF (manual calculation) 0.7267	1.9

Choose depletion in the range 2-6mL

Run triplicate GGA standards

CONTROL : GLUCOSE/GLUTAMIC ACID STANDARD GGA Standard Expiration Date 2/13/2022

Description	Bottle #	GGA - mls of 300 ppm GGA solution used	Seed - mls of seed solution used	Initial DO <= 9.2 (at 17 - 23°C)	Final DO (at 17 - 23°C)	Depletion	SCF	Net Depletion	% Net Depletion	Dil. Factor	BOD	
GGA STD	19	6.0	4.0	8.64	4.28	4.36	0.727	3.63	42.1%	0.020	182	Average GGA
GGA STD	20	6.0	4.0	8.62	3.89	4.73	0.727	4.00	46.4%	0.020	200	
GGA STD	21	6.0	4.0	8.63	4.02	4.61	0.727	3.88	45.0%	0.020	194	192
					must be > 1 mg/L	must be > 2 mg/L						Must calc to (198 ± 30.5)

Run duplicates for each of the three dilutions

SAMPLES : BOD^5 of the live sample

Seed Control Factor (B1-B2)f: 0.727

Description	Bottle #	Sample Volume (mL) (17 - 23°C)	Seed Volume (mL)	Initial DO D1	Initial Temp °C (17-23°)	Final DO (at 17 - 23°C) D2	Final Temp °C (17-23°)	Depletion (D1-D2)	Net Depletion (D1-D2) - (B1-B2)f	Dil. Factor P	Sample BOD [(D1-D2)-(B1-B2)f]/P	
2.5	31	20	4.0	8.24	19.9	6.54	19.8	1.70	0.97	0.067		Average BOD^5
2.5	32	25	4.0	8.11	19.9	6.00	19.8	2.11	1.38	0.083	16.60	
2.5	33	30	4.0	8.02	19.9	5.82	19.8	2.20	1.47	0.100	14.73	15.7
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		
												#DIV/0!
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		Average BOD^5
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		
										0.000		
				must be 7.0-9.0 mg/L		must be > 1.0mg/L		must be > 2.0 mg/L				

Incubation Temperature 20 ± 1° C
Incubation Time = 5 days +/- 6 hours

Rev. Date: 1/9/2019

Sample Date 7/11/21 1100 HRS – 7/12/21 1100 HRS

BOD Testing, Standard Methods 5210 B-2011, 22nd edition; DO, 4500-0 G-2011 Membrane Electrode Method

Date In	7/12/2021	Time	1330	Tech	MK	Sample Code	21-913	Bar. Press.
Date Out	7/17/2021	Time	1315	Tech	MK	Sample Location	ASB Eff 2.5	753/751
						Conductivity		

Run triplicate blanks

BLANK / DILUTION WATER - Quality of BOD Dilution Water

Bottle #	Initial DO (must be 7.5 - 9.0)	Initial Temp °C (17-23°)	Final DO	Final °C Temp (17-23°)	Depletion (must be < 0.20 mgl)	
1	8.68	19.9	8.59	19.8	0.09	Average
2	8.69	19.9	8.58	19.8	0.11	
3	8.71	19.9	8.67	19.8	0.04	0.08

Discard all data for tests using this water if average > 0.20 mg/l

Nutrient Expiration DEC.2024 NOV.2024

	Initial	Final	ml. / Norm.
pH (6.0 to 8.0)	7.4		
(H_2SO_4)			
(NaOH)			
Temp °C (17 - 23°)	19.6	20.2	Cross Check QC Tests
Chart DO	9.20	9.05	
Air DO	9.09	8.95	

IF pH is not 6 - 8 then adjust to 7.0 - 7.2

Run triplicate seed dilutions

CONTROL / SEED + DILUTION WATER - Seed Control Factor (SCF) POLYSEED Expiration 2/22

Quantity of seed used in final "live" seed control test, ml	4.0	*Note: This can vary from 2 to 6 ml*
Quantity of BOD water used as dilution in this test, ml	300	*Note: This should not vary*

Bottle #	Volume of seed added to each bottle - ml	Initial DO on day 1 (at 17 - 23°C)	Initial Temp °C (17-23°)	Final DO on day 5 (at 17 - 23°C)	Final Temp °C (17-23°)	DO Depletion over a 5 day period	f factor calculation using 4 ml of seed in live sample	Seed Correction Factor (SCF). This is the DO depletion imposed by the seed and must be subtracted in the final calculations	Choose seed correction in the range 0.6 - 1.0 mg/L. Use only the average of those chosen	Seed Correction Factors must be +/-30%
#	(at 17 - 23°C)	B1		B2		(B1-B2)	4 mL seed	(B1-B2)f		
2	15	8.70	19.9	6.21	19.7	2.49	0.27	0.664		-1.9
4	20	8.69	19.9	5.29	19.7	3.40	0.20	0.680		0.5
10	25	8.70	19.9	4.41	19.7	4.29	0.16	0.686	Average SCF (manual calculation)	1.4
									0.6768	
						Choose depletion in the range 2-6mL				

Run triplicate GGA standards

CONTROL : GLUCOSE/GLUTAMIC ACID STANDARD GGA Standard Expiration Date 2/13/2022

Description	Bottle #	GGA - mls of 300 ppm GGA solution used	Seed - mls of seed solution used	Initial DO <= 9.2 (at 17 - 23°C)	Final DO (at 17 - 23°C)	Depletion	SCF	Net Depletion	% Net Depletion	Dil. Factor	BOD	
GGA STD	824	6.0	4.0	8.67	4.28	4.39	0.677	3.71	42.8%	0.020	186	Average GGA
GGA STD	860	6.0	4.0	8.66	4.39	4.27	0.677	3.59	41.5%	0.020	180	
GGA STD	3	6.0	4.0	8.68	4.53	4.15	0.677	3.47	40.0%	0.020	174	180
					must be > 1 mg/L	must be > 2 mg/L						Must calc to (198 ± 30.5)

Run duplicates for each of the three dilutions

SAMPLES : BOD^5 of the live sample

Seed Control Factor (B1-B2)f: 0.677

Description	Bottle #	Sample Volume (mL) (17 - 23°C)	Seed Volume (mL)	Initial DO D1	Initial Temp °C (17-23°)	Final DO (at 17 - 23°C) D2	Final Temp °C (17-23°)	Depletion (D1-D2)	Net Depletion (D1-D2) - (B1-B2)f	Dil. Factor P	Sample BOD [(D1-D2)-(B1-B2)f]/P	
2.5	11	20	4.0	8.26	20.0	6.01	19.7	2.25	1.57	0.067	23.60	Average BOD^5
2.5	15	25	4.0	8.14	20.0	5.47	19.7	2.67	1.99	0.083	23.92	
2.5	18	30	4.0	8.04	20.0	4.90	19.7	3.14	2.46	0.100	24.63	24.0
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		
												#DIV/0!
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		Average BOD^5
			4.0							0.000		
			4.0							0.000		
			4.0							0.000		
										0.000		
				must be 7.0-9.0 mg/L		must be > 1.0mg/L		must be > 2.0 mg/L				

Incubation Temperature 20 ± 1° C

Incubation Time = 5 days +/- 6 hours

Rev. Date: 1/9/2019

New-Indy Catawba
Field Data Sheets

Location Code	
2A	Foul Condensate (inlet)
2B	Stripped Condensate (outlet)
3A	Paper Machine Whitewater

Date	Stack Test	Time	Location	Analysis	Sulfides (mg/L)	pH	Temp (°F)	Shipping Destination	Shipping Date
######	-	8:00	2A	Methanol	-	7.97	142	ALS Kelso	6/24/2021
		12:00	2A	Methanol	-	7.8	140	ALS Kelso	6/24/2021
		16:00	2A	Methanol	-	7.8	140	ALS Kelso	6/24/2021
6/23/2021	-	8:00	2A	Methanol	-	8.07	117.1	ALS Kelso	6/24/2021
		12:00	2A	Methanol	-	7.89	126.4	ALS Kelso	6/24/2021
		16:00	2A	Methanol	-	7.95	139.8	ALS Kelso	6/24/2021
	Combo Boiler 1 - Run 1	12:45	2A	Methanol	-	7.91	132.8	ALS Kelso	6/24/2021
				Sulfides	0.389			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		12:50	2B	Methanol	-	7.16	131.7	ALS Kelso	6/24/2021
				Sulfides	0.254			-	-
				TRS	-			ALS Simi Valley	6/24/2021
	Combo Boiler 1 - Run 2	14:40	2A	Methanol	-	7.97	140.3	ALS Kelso	6/24/2021
				Sulfides	0.431			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		14:35	2B	Methanol	-	7.86	130.4	ALS Kelso	6/24/2021
				Sulfides	5.05			-	-
				TRS	-			ALS Simi Valley	6/24/2021
	Paper Machine - Run 1	15:45	2A	Methanol	-	7.66	140.9	ALS Kelso	6/24/2021
				Sulfides	0.108			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		15:50	2B	Methanol	-	7.97	147	ALS Kelso	6/24/2021
				Sulfides	3.98			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		15:48	3A	Methanol	-	7.2	92.48	ALS Kelso	6/24/2021
				Sulfides	0.062			-	-
				TRS	-			ALS Simi Valley	6/24/2021
	Combo Boiler 1 - Run 3	16:00	2A	Methanol	-	7.95	139.8	ALS Kelso	6/24/2021
				Sulfides	0.08			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		16:10	2B	Methanol	-	7.67	148.8	ALS Kelso	6/24/2021
				Sulfides	5.23			-	-
				TRS	-			ALS Simi Valley	6/24/2021
	Paper Machine - Run 2	16:45	2A	Methanol	-	7.96	143.6	ALS Kelso	6/24/2021
				Sulfides	0.326			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		16:50	2B	Methanol	-	7.51	170.4	ALS Kelso	6/24/2021
				Sulfides	4.83			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		16:20	3A	Methanol	-	7.2	93.92	ALS Kelso	6/24/2021
				Sulfides	0.083			-	-
				TRS	-			ALS Simi Valley	6/24/2021
	Paper Machine - Run 3	17:45	2A	Methanol	-	7.94	145.9	ALS Kelso	6/24/2021
				Sulfides	0.339			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		17:50	2B	Methanol	-	7.5	166.8	ALS Kelso	6/24/2021
				Sulfides	5.8			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		17:40	3A	Methanol	-	7.3	94.46	ALS Kelso	6/24/2021
				Sulfides	0.101			-	-
				TRS	-			ALS Simi Valley	6/24/2021
	Combo Boiler 1 - Run 1 (different configuration - No SOGs?)	19:00	2A	Methanol	-	7.95	146.8	ALS Kelso	6/24/2021
				Sulfides	0.037			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		19:05	2B	Methanol	-	7.49	169.1	ALS Kelso	6/24/2021
				Sulfides	5.08			-	-
				TRS	-			ALS Simi Valley	6/24/2021
	Combo Boiler 1 - Run 2	20:50	2A	Methanol	-	7.97	147	ALS Kelso	6/24/2021
				Sulfides	0.221			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		20:55	2B	Methanol	-	7.39	179.9	ALS Kelso	6/24/2021
				Sulfides	7.48			-	-
				TRS	-			ALS Simi Valley	6/24/2021
	Combo Boiler 1 - Run 3	22:10	2A	Methanol	-	8.07	137.6	ALS Kelso	6/24/2021
				Sulfides	0.046			-	-
				TRS	-			ALS Simi Valley	6/24/2021
		22:15	2B	Methanol	-	7.46	168.6	ALS Kelso	6/24/2021
				Sulfides	5.08			-	-
				TRS	-			ALS Simi Valley	6/24/2021

New-Indy Catawba
Sample Data Sheet

Location Code	
2A	Foul Condensate (inlet)
2B	Stripped Condensate (outlet)
3A	Paper Machine Whitewater

Date	Stack Test	Time	Location	Analysis	Sulfides (mg/L)	pH	Temp (°F)	Shipping Destination	Shipping Date
6/24/2021	-	8:00	2A	Methanol	-	8.07	131.9	ALS Kelso	6/28/2021
		12:00	2A	Methanol	-	8.10	134.2	ALS Kelso	6/28/2021
		16:00	2A	Methanol	-	8.03	134.2	ALS Kelso	6/28/2021
	Paper Machine (Vent 3) Run 1			Methanol	-			ALS Kelso	6/28/2021
		10:00	3A	Sulfides	0.092	7.2	90.1	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 3) Run 2			Methanol	-			ALS Kelso	6/28/2021
		11:15	3A	Sulfides	0.128	7.2	92.1	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 3) Run 2 - QA/QC Duplicate Sample			Methanol	-			ALS Kelso	6/28/2021
		11:15	3A	Sulfides	0.128	7.2	92.1	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 3) Run 3			Methanol	-			ALS Kelso	6/28/2021
		12:10	3A	Sulfides	0.088	7.3	92.1	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 2) Run 1			Methanol	-			ALS Kelso	6/28/2021
		13:31	3A	Sulfides	0.152	7.3	94.6	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 2) Run 2			Methanol	-			ALS Kelso	6/28/2021
		14:50	3A	Sulfides	0.140	7.3	95.4	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Combination Boiler 2 - Run 1			Methanol	-			ALS Kelso	6/28/2021
		15:10	2A	Sulfides	95.4	8.08	132.9	-	
				TRS	-			ALS Simi Valley	6/28/2021
				Methanol	-			ALS Kelso	6/28/2021
		15:15	2B	Sulfides	19.8	8.62	121.6	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Combination Boiler 2 - Run 1 QA/QC Duplicate Sample			Methanol	-			ALS Kelso	6/28/2021
		15:10	2A	Sulfides	111	8.08	132.9	-	
				TRS	-			ALS Simi Valley	6/28/2021
				Methanol	-			ALS Kelso	6/28/2021
		15:15	2B	Sulfides	17.6	8.62	121.6	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 2) Run 3			Methanol	-			ALS Kelso	6/28/2021
		16:00	3A	Sulfides	0.097	7.3	95.7	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Combination Boiler 2 - Run 2			Methanol	-			ALS Kelso	6/28/2021
		17:00	2A	Sulfides	125.2	8.02	135.6	-	
				TRS	-			ALS Simi Valley	6/28/2021
				Methanol	-			ALS Kelso	6/28/2021
		17:05	2B	Sulfides	17.4	8.18	152.4	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Combination Boiler 2 - Run 3			Methanol	-			ALS Kelso	6/28/2021
		18:45	2A	Sulfides	126.6	8.05	133.8	-	
				TRS	-			ALS Simi Valley	6/28/2021
				Methanol	-			ALS Kelso	6/28/2021
		18:50	2B	Sulfides	18.9	8.07	163.0	-	
				TRS	-			ALS Simi Valley	6/28/2021

New-Indy Catawba
Field Data Sheet

Location Code	
2A	Foul Condensate (inlet)
2B	Stripped Condensate (outlet)
3A	Paper Machine Whitewater

Date	Stack Test	Time	Location	Analysis	Sulfides (mg/L)	pH	Temp (°F)	Shipping Destination	Shipping Date
6/25/2021	-	8:05	2A	Methanol	-	8.32	132.9	ALS Kelso	6/28/2021
		12:05	2A	Methanol	-	8.07	141.9	ALS Kelso	6/28/2021
		16:00	2A	Methanol	-	8.33	135.1	ALS Kelso	6/28/2021
	Paper Machine (Vent ?) Run 1			Methanol	-			ALS Kelso	6/28/2021
		8:17	3A	Sulfides	0.145	7.3	88.5	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent ?) Run 2			Methanol	-			ALS Kelso	6/28/2021
		9:24	3A	Sulfides	0.157	7.2	92.1	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent ?) Run 3			Methanol	-			ALS Kelso	6/28/2021
		10:30	3A	Sulfides	0.125	7.2	93.6	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Combination Boiler 2 - Run 1			Methanol	-			ALS Kelso	6/28/2021
		10:35	2A	Sulfides	132.6	8.22	129.5	-	
				TRS	-			ALS Simi Valley	6/28/2021
				Methanol	-			ALS Kelso	6/28/2021
		10:40	2B	Sulfides	0.641	9.34	130.2	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Combination Boiler 2 - Run 2			Methanol	-			ALS Kelso	6/28/2021
		12:05	2A	Sulfides	124.8	8.07	141.9	-	
				TRS	-			ALS Simi Valley	6/28/2021
				Methanol	-			ALS Kelso	6/28/2021
		12:10	2B	Sulfides	24.2	8.89	126.3	-	6/282021
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 4) Run 1			Methanol	-			ALS Kelso	6/28/2021
		12:00	3A	Sulfides	0.135	7.2	95.0	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 4) Run 2			Methanol	-			ALS Kelso	6/28/2021
		12:55	3A	Sulfides	0.124	7.2	97.0	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Combination Boiler 2 - Run 3			Methanol	-			ALS Kelso	6/28/2021
		13:45	2A	Sulfides	151	8.04	136.2	-	
				TRS	-			ALS Simi Valley	6/28/2021
				Methanol	-			ALS Kelso	6/28/2021
		13:50	2B	Sulfides	24	8.61	137.8	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 4) Run 3			Methanol	-			ALS Kelso	6/28/2021
		14:03	3A	Sulfides	0.149	7.1	98.2	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 6) Run 1			Methanol	-			ALS Kelso	6/28/2021
		16:30	3A	Sulfides	0.185	7.1	98.8	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 6) Run 2			Methanol	-			ALS Kelso	6/28/2021
		17:40	3A	Sulfides	0.167	7.1	98.4	-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent 6) Run 3			Methanol	-			ALS Kelso	6/28/2021
		18:45	3A	Sulfides	0.171	6.97	99.7	-	
				TRS	-			ALS Simi Valley	6/28/2021

New-Indy Catawba
Field Data Sheet

Location Code	
2A	Foul Condensate (inlet)
2B	Stripped Condensate (outlet)
3A	Paper Machine Whitewater
3B	Pulp Dryer Whitewater

Date	Stack Test	Time	Location	Analysis	Sulfides (mg/L)	pH	Temp (°F)	Shipping Destination	Shipping Date
6/26/2021	-	8:00	2A	Methanol	-	8.64	130.2	ALS Kelso	6/28/2021
		12:00	2A	Methanol	-	8.58	139.2	ALS Kelso	6/28/2021
		16:00	2A	Methanol	-	8.60	131.4	ALS Kelso	6/28/2021
	Paper Machine (Vent) Run 1	10:10	3A	Methanol	-	7	89.7	ALS Kelso	6/28/2021
				Sulfides	0.256			-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent) Run 2	11:25	3A	Methanol	-	6.56	86.9	ALS Kelso	6/28/2021
				Sulfides	0.261			-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent) Run 3	12:30	3A	Methanol	-	6.48	102.2	ALS Kelso	6/28/2021
				Sulfides	0.301			-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent) Run 1	14:00	3A	Methanol	-	6.55	100.9	ALS Kelso	6/28/2021
				Sulfides	0.517			-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent) Run 2	14:45	3A	Methanol	-	6.5	103.8	ALS Kelso	6/28/2021
				Sulfides	0.553			-	
				TRS	-			ALS Simi Valley	6/28/2021
	Paper Machine (Vent) Run 3	15:50	3A	Methanol	-	6.5	103.1	ALS Kelso	6/28/2021
				Sulfides	0.609			-	
				TRS	-			ALS Simi Valley	6/28/2021
	Pulp Dryer (Vent) Run 1	13:05	3B	Methanol	-	3.81	126.3	ALS Kelso	6/28/2021
				Sulfides	0.12			-	
				TRS	-			ALS Simi Valley	6/28/2021
	Pulp Dryer (Vent) Run 2	14:15	3B	Methanol	-	3.81	137.4	ALS Kelso	6/28/2021
				Sulfides	0.101			-	
				TRS	-			ALS Simi Valley	6/28/2021
	Pulp Dryer (Vent) Run 3	15:30	3B	Methanol	-	3.82	137.1	ALS Kelso	6/28/2021
				Sulfides	0.113			-	
				TRS	-			ALS Simi Valley	6/28/2021

New-Indy Catawba
Field Data Sheet

Location Code	
2A	Foul Condensate (inlet)
2B	Stripped Condensate (outlet)
3A	Paper Machine Whitewater

Date	Stack Test	Time	Location	Analysis	Sulfides (mg/L)	pH	Temp (°F)	Shipping Destination	Shipping Date	
6/27/2021	-	8:00	2A	Methanol	-	8.68	129.9	ALS Kelso	6/28/2021	
		12:00	2A	Methanol	-	8.73	127.4	ALS Kelso	6/28/2021	
		16:00	2A	Methanol	-	8.33	138.2	ALS Kelso	6/28/2021	
6/28/2021	-	8:00	2A	Methanol	-	8.4	137.1	ALS Kelso	7/1/2021	
		12:00	2A	Methanol	-	8.31	137.8	ALS Kelso	7/1/2021	
		16:00	2A	Methanol	-	8.38	136.5	ALS Kelso	7/1/2021	
6/29/2021	-	8:00	2A	Methanol	-	8.46	142	ALS Kelso	7/1/2021	
		12:00	2A	Methanol	-	8.41	137.6	ALS Kelso	7/1/2021	
		16:00	2A	Methanol	-	8.58	137.3	ALS Kelso	7/1/2021	
6/30/2021	-	8:00	2A	Methanol	-	8.47	140.1	ALS Kelso	7/1/2021	
		14:00	2A	Methanol	-	8.72	127.2	ALS Kelso	7/1/2021	
		18:00	2A	Methanol	-	8.7	118.1	ALS Kelso	7/1/2021	
	-	8:00	2A	Methanol	-	8.47	140.1	ALS Kelso	7/1/2021	QA
		14:00	2A	Methanol	-	8.72	127.2	ALS Kelso	7/1/2021	QA
		18:00	2A	Methanol	-	8.7	118.1	ALS Kelso	7/1/2021	QA
7/1/2021	-	9:00	2A	Methanol	-	8.36	128.6	ALS Kelso	7/7/2021	
		13:00	2A	Methanol	-	8.07	142.3	ALS Kelso	7/7/2021	
		17:00	2A	Methanol	-	8.01	141.9	ALS Kelso	7/7/2021	
7/2/2021	-	8:00	2A	Methanol	-	8.17	139.5	ALS Kelso	7/7/2021	
		12:00	2A	Methanol	-	8.21	134.9	ALS Kelso	7/7/2021	
		16:00	2A	Methanol	-	7.98	134.9	ALS Kelso	7/7/2021	
7/3/2021	-	8:00	2A	Methanol	-	8.08	137.4	ALS Kelso	7/7/2021	
		12:00	2A	Methanol	-	7.99	140	ALS Kelso	7/7/2021	
		16:00	2A	Methanol	-	8.08	139.1	ALS Kelso	7/7/2021	

New-Indy Catawba
Field Data Sheet

Date	Stack Test	Time	Location	Analysis	Sulfides (mg/L)	pH	Temp (°F)	pping Destinat	Shipping Date
7/4/2021	'	8:00	2A - Foul Condensate	Methanol	-	8.16	132.9	ALS Kelso	7/7/2021
		12:40	2A - Foul Condensate	Methanol	-	9.05	133.3	ALS Kelso	7/7/2021
		16:40	2A - Foul Condensate	Methanol	-	7.99	142.3	ALS Kelso	7/7/2021
7/5/2021	'	8:00	2A - Foul Condensate	Methanol	-	7.98	126.3	ALS Kelso	7/7/2021
		12:00	2A - Foul Condensate	Methanol	-	7.65	132.9	ALS Kelso	7/7/2021
		16:00	2A - Foul Condensate	Methanol	-	7.3	133.5	ALS Kelso	7/7/2021
7/6/2021	'	8:00	2A - Foul Condensate	Methanol	-	10.14	134.7	ALS Kelso	7/7/2021
		12:00	2A - Foul Condensate	Methanol	-	8.29	146.3	ALS Kelso	7/7/2021
		16:00	2A - Foul Condensate	Methanol	-	7.65	158.7	ALS Kelso	7/7/2021
7/7/2021	'	8:00	2A - Foul Condensate	Methanol	-	7.97	135.8	ALS Kelso	7/12/2021
		12:00	2A - Foul Condensate	Methanol	-	7.99	134.9	ALS Kelso	7/12/2021
		16:00	2A - Foul Condensate	Methanol	-	7.95	142.8	ALS Kelso	7/12/201
7/8/2021	'	8:00	2A - Foul Condensate	Methanol	-	8.37	127	ALS Kelso	7/12/2021
		12:00	2A - Foul Condensate	Methanol	-	8.26	134.4	ALS Kelso	7/12/2021
		16:00	2A - Foul Condensate	Methanol	-	8.23	140.1	ALS Kelso	7/12/201

New-Indy Catawba
Field Data Sheet

Date	Time	Sample Location	Sample Location	Analyte	Lab Location	pH	Temp	DO
7/9/2021	800	2A	FC Inlet	HAPs	Kelso	8.37	137.6	
				COD	Pace			
				Sulfides	0.039			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1310	2A	FC Inlet	HAPs	Kelso	8.39	135.5	
				COD	Pace			
				Sulfides	0.003			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1700	2A	FC Inlet	HAPs	Kelso	8.32	134.2	
				COD	Pace			
				Sulfides	0 (below dectection)			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1700 QA Duplicates	2A	FC Inlet	HAPs	Kelso	8.32	134.2	
				COD	Pace			
				Sulfides	0 (below dectection)			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	800	2B	FC Outlet	Methanol	Kelso	9.56	130.2	
				Sulfides	0.592			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1315	2B	FC Outlet	Methanol	Kelso	9.81	123.3	
				Sulfides	0.097			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1705	2B	FC Outlet	Methanol	Kelso	9.22	133.8	
				Sulfides	0.791			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1705 QA Duplicates	2B	FC Outlet	Methanol	Kelso	9.22	133.8	
				Sulfides	-			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	800	1A	ASB Influent	HAPs	Kelso	9.11	112.1	0.51
				Sulfides	0.202			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1340	1A	ASB Influent	HAPs	Kelso	9.08	110.1	0.15
				Sulfides	1.888			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1740	1A	ASB Influent	HAPs	Kelso	8.62	109.7	0.26
				Sulfides	1.252			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	1740 QA Duplicates	1A	ASB Influent	HAPs	Kelso	8.62	109.7	0.26
				Sulfides	-			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	Daily	1A	ASB Influent	COD	Daily Composite	7.7	112	1.24
7/9/2021	Drone Flight 1 0845	5A	ASB Zone 1	Methanol	Kelso	8.22(1)	89.3	1.99(1)
				Sulfides	2.28			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	Drone Flight 2 1248	5A	ASB Zone 1	Methanol	Kelso	8.80	97.5	0.05
				Sulfides	8.4			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	Drone Flight 3 1636	5A	ASB Zone 1	Methanol	Kelso	9.22	100.6	0.02
				Sulfides	9.6			
				TRS - 2 vials	Simi Valley			

New-Indy Catawba
Field Data Sheet

Date	Time	Sample Location	Sample Location	Analyte	Lab Location	pH	Temp	DO
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	Drone Flight 1 0925	5B	ASB Zone 2	Methanol	Kelso	8.53(1)	84.3	0.79
				Sulfides	0.037			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	Drone Flight 2 1326	5B	ASB Zone 2	Methanol	Kelso	8.53	94.3	0.04
				Sulfides	0.051			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	Drone Flight 3 1703	5B	ASB Zone 2	Methanol	Kelso	8.65	88.9	0.03
				Sulfides	0.131			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	Drone Flight 1 0953	5C	ASB Zone 3	Methanol	Kelso	8.73(1)	83.3	2.59(1)
				Sulfides	0.017			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	Drone Flight 2 1344	5C	ASB Zone 3	Methanol	Kelso	8.74	92.1	1.79
				Sulfides	0.045			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	Drone Flight 3 1719	5C	ASB Zone 3	Methanol	Kelso	8.74	86.2	1.66
				Sulfides	0.033			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/9/2021	After Drone Flight 1	1B	ASB Effluent	Methanol	Kelso	7.39	84.2	1.98
				Sulfides	0.002			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	After Drone Flight 2 1345	1B	ASB Effluent	Methanol	Kelso	7.38	89.9	1.25
				Sulfides	0.022			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	After Drone Flight 3 1745	1B	ASB Efffluent	Methanol	Kelso	7.31	88.3	1.05
				Sulfides	0.048			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	QA Duplicates	1B	ASB Efffluent	Methanol	Kelso	7.31	88.3	1.05
				Sulfides	0.048			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	Daily	1B	ASB Effluent	BOD5	Daily Composite	7.39	84.2	2.59
7/9/2021	Daily 11:11	4A	Post-Aeration Inlet	Sulfides	0.057	7.67	85.2	0.25
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	Daily 11:25	4B	Post-Aeration Surface	Sulfides	0.014	7.81	83.6	2.88
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/9/2021	Daily 11:23	4C	Post-Aeration Outlet	Sulfides	0.02	7.75	84.3	3.17
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			

Note: Measurements collected using New-Indy Catawba portable lab meter (YSI Pro 20, S/N 16E1017170) unless otherwise noted.

[1] Measurement collected using Horiba U-5000 meter (S/N TS19L67E) and Probe U-51 (S/N WHC25XR9).

New-Indy Catawba
Field Data Sheet

Date	Time	Sample Location	Sample Location	Analyte	Lab Location	pH	Temp	DO
7/10/2021	820	2A	FC Inlet	HAPs	Kelso	8.21	131.3	
				COD	Pace			
				Sulfides	0.202			
				Sulfides QA	0 (below dectection)			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1215	2A	FC Inlet	HAPs	Kelso	8.12	134.0	
				COD	Pace			
				Sulfides	0.068			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1605	2A	FC Inlet	HAPs	Kelso	8.16	134.9	
				COD	Pace			
				Sulfides	0.159			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	825	2B	FC Outlet	Methanol	Kelso	8.13	137.3	
				Sulfides	15.7			
				Sulfides QA	14.5			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1220	2B	FC Outlet	Methanol	Kelso	8.29	105.6	
				Sulfides	15.5			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1610	2B	FC Outlet	Methanol	Kelso	7.86	138.5	
				Sulfides	15.6			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	850	1A	ASB Influent	HAPs	Kelso	9.01	112.1	
				Sulfides	0.212			
				Sulfides QA	0.216			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1304	1A	ASB Influent	HAPs	Kelso	9.38	112.6	
				Sulfides	0.312			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1640	1A	ASB Influent	HAPs	Kelso	8.52	113.6	
				Sulfides	1.16			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	720	1A	ASB Influent	COD	Daily Composite	8.04	109.7	
7/10/2021	939	5A	ASB Zone 1	Methanol	Kelso	8.2	93.74	0.02
				Sulfides	0.314			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	939 - QA Sample	5A	ASB Zone 1	Methanol	Kelso	8.2	93.74	0.02
				Sulfides QA	0.170			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	1307	5A	ASB Zone 1	Methanol	Kelso	8.04	99.32	0.05
				Sulfides	4.0			
				Sulfides QA	2.5			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	1700	5A	ASB Zone 1	Methanol	Kelso	8.01	98.42	0.12
				Sulfides	13.4			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
				Methanol	Kelso			

New-Indy Catawba
Field Data Sheet

Date	Time	Sample Location	Sample Location	Analyte	Lab Location	pH	Temp	DO
7/10/2021	831	5B	ASB Zone 2	Sulfides	0.021	8.28	84.56	0.02
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	831 QA Samples	5B	ASB Zone 2	Methanol	Kelso	8.28	84.56	0.02
				Sulfides QA	0.020			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	1233	5B	ASB Zone 2	Methanol	Kelso	8.41	93.02	0.04
				Sulfides	0.119			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	1632	5B	ASB Zone 2	Methanol	Kelso	8.49	91.22	0.1
				Sulfides	0.123			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	814	5C	ASB Zone 3	Methanol	Kelso	8.33	82.94	1.98
				Sulfides	0.007			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	814 QA Samples	5C	ASB Zone 3	Methanol	Kelso	8.33	82.94	1.98
				Sulfides QA	0 (below dectection)			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	1214	5C	ASB Zone 3	Methanol	Kelso	8.43	89.06	1.51
				Sulfides	0.054			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	1615	5C	ASB Zone 3	Methanol	Kelso	8.37	91.4	0.93
				Sulfides	0.031			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/10/2021	855	1B	ASB Effluent	Methanol	Kelso	7.56	85.5	0.52
				Sulfides	0.124			
				Sulfides QA	0.108			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1309	1B	ASB Effluent	Methanol	Kelso	7.55	90.6	0.74
				Sulfides	0.076			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1645	1B	ASB Efffluent	Methanol	Kelso	7.51	90.6	0.09
				Sulfides	0.22			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	725	1B	ASB Effluent	BOD5	Daily Composite	7.51	85.1	1.93
7/10/2021	1011	4A	Post-Aeration Inlet	Sulfides	0.029	7.69	84.5	0.53
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1011 QA Samples	4A	Post-Aeration Inlet	Sulfides QA	0.020	7.69	84.5	0.53
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1021	4B	Post-Aeration Surface	Sulfides	0 (below dectection)	7.78	84.9	15.3
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1021 QA Samples	4B	Post-Aeration Surface	Sulfides	0 (below dectection)	7.78	84.9	15.3
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			

New-Indy Catawba
Field Data Sheet

Date	Time	Sample Location	Sample Location	Analyte	Lab Location	pH	Temp	DO
7/10/2021	1023	4C	Post-Aeration Outlet	Sulfides	**0 (below dectection)**	7.77	84.3	**18**
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/10/2021	1023 QA Samples	4C	Post-Aeration Outlet	Sulfides	**0 (below dectection)**	7.77	84.3	**18**
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			

New-Indy Catawba
Field Data Sheet

Date	Time	Sample Location	Sample Location	Analyte	Lab Location	pH	Temp	DO
7/11/2021	815	2A	FC Inlet	HAPs	Kelso	8.52	124.1	
				COD	Pace			
				Sulfides	**0 (below dectection)**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1220	2A	FC Inlet	HAPs	Kelso	8.34	132.9	
				COD	Pace			
				Sulfides	**0.115**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1610	2A	FC Inlet	HAPs	Kelso	8.22	134.7	
				COD	Pace			
				Sulfides	**0.347**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	820	2B	FC Outlet	Methanol	Kelso	9.16	148.9	
				Sulfides	**18.2**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1225	2B	FC Outlet	Methanol	Kelso	9.20	109.8	
				Sulfides	**16.8**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1615	2B	FC Outlet	Methanol	Kelso	8.15	153.1	
				Sulfides	**11**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	850	1A	ASB Influent	HAPs	Kelso	8.88	109.1	
				Sulfides	**0.405**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1255	1A	ASB Influent	HAPs	Kelso	8.84	114.4	
				Sulfides	**0.413**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1640	1A	ASB Influent	HAPs	Kelso	9.04	113.5	
				Sulfides	**0.619**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	730	1A	ASB Influent	COD	Daily Composite	7.76	110.0	
7/11/2021	835	5A	ASB Zone 1	Methanol	Kelso	7.96	91.94	0.1
				Sulfides	**7.70**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/11/2021	1225	5A	ASB Zone 1	Methanol	Kelso	8.24	93.56	0.09
				Sulfides	**0.884**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/11/2021	1612	5A	ASB Zone 1	Methanol	Kelso	7.85	94.46	0.13
				Sulfides	**1.804**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/11/2021	904	5B	ASB Zone 2	Methanol	Kelso	8.06	87.26	0.13
				Sulfides	**0.046**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/11/2021	1249	5B	ASB Zone 2	Methanol	Kelso	8.00	94.82	0.11
				Sulfides	**0.148**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
				Methanol	Kelso			
				Sulfides	**0.042**			

New-Indy Catawba
Field Data Sheet

Date	Time	Sample Location	Sample Location	Analyte	Lab Location	pH	Temp	DO
7/11/2021	1644	5B	ASB Zone 2	TRS - 2 vials	Simi Valley	7.98	93.92	0.1
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/11/2021	925	5C	ASB Zone 3	Methanol	Kelso	8.23	85.1	1.43
				Sulfides	**0.015**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/11/2021	1309	5C	ASB Zone 3	Methanol	Kelso	7.93	91.94	1.38
				Sulfides	**0.034**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/11/2021	1702	5C	ASB Zone 3	Methanol	Kelso	7.82	91.58	0.27
				Sulfides	**0.034**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
				MLVSS	Pace			
7/11/2021	855	1B	ASB Effluent	Methanol	Kelso	7.50	87.0	0.1
				Sulfides	**0.025**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1300	1B	ASB Effluent	Methanol	Kelso	7.58	91.4	0.32
				Sulfides	**0.025**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1645	1B	ASB Efffluent	Methanol	Kelso	7.46	91.6	0.07
				Sulfides	**0.033**			
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	735	1B	ASB Effluent	BOD5	Daily Composite	8.26	86.0	2.28
7/11/2021	1010	4A	Post-Aeration Inlet	Sulfides	**0.034**	7.60	84.5	3.68
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1017	4B	Post-Aeration Surface	Sulfides	**0.035**	7.99	83.8	3.27
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			
7/11/2021	1015	4C	Post-Aeration Outlet	Sulfides	**0.014**	7.90	84.3	0.74
				TRS - 2 vials	Simi Valley			
				TRS - 2 vials	Keiko			