

November 29, 2021

LTR0054

Judy Grycko  
OESAC CEU COMMITTEE  
P.O. Box 577  
Canby, OR 97013-0577

Subject: Instructor Background & Information Form - WW Level 2 Operator Course for CEU's

Dear Judy,

We are following up on the approval of our **Level 1** Wastewater Course and asking for consideration towards awarding accreditation CEU hours for the 13-Module **Level 2** Wastewater Operator Course.

This course is not intended to mimic other institutional correspondence courses. This course emphasizes the unique challenges and needs encountered by the facilities we are contracted to operate. This course provides a more detailed view of Operator operations and maintenance field best practices while in the field. Level 2 provides the Operator (who has at least 1 year of practical experience) an in-depth look at additional processes and field treatment applications.

By our estimation, this self-paced course and final exam will take an operator approximately 13 to 16 hours to complete. The module narrative is complimented with graphic field images so the operator can more effectively comprehend and relate to the material presented. Jacobs will provide project and regional resources to help those who enroll for this course. Program accountability will be documented by a signed attendance sheet and the module quiz scores will be tracked.

As the course author, I bring over 40 years of applied wastewater experience to the development of this material. I hold an active Grade 4 Wastewater License in Oregon and in Utah. I have worked with State Exam Review Boards in several States. The Jacobs' QAQC Review Board for this Course includes 7 members totaling over 270 collective years of wastewater utility experience.

We hope your State will award this course with the CEU equivalency of 1.6 CEUs. If you require any additional information, please feel free to call.

Sincerely,



**John W. Dunty, III**  
Jacobs Senior Technical Consultant  
352.308.4090  
[John.Dunty@jacobs.com](mailto:John.Dunty@jacobs.com)

Attachments: Instructor Background And Information Form  
Level 2 Wastewater Course Syllabus  
John W. Dunty, III, Curriculum Vitae



## Instructor Background And Information Form

Thank you for filling out this form.

Presentation Title: Level 2 Wastewater Operator Course

Presenter: John Dunty Title: Senior Consultant

Employer: Jacobs Address: 6440 S. Millrock Drive, Suite 300

City: Holladay State: UT Zip: 84121 Phone: (352) 308-4090

Summary of Lesson content: The 13 Module self-paced Course provides a more detailed view of Operator operations and maintenance field best practices while in the field. Level 2 provides the Operator (who has at least 1 year of practical experience) an in-depth look at additional processes and field treatment applications.

Professional Background: ( Note a brief - 2 page maximum - resume may be submitted in lieu of the following data. Please be sure the resume includes all requested information. Qualifications should be related to your presentation.) Use the reverse side of this form if more room is needed to fully answer the following questions.

Primary Knowledge/Skills/Abilities related to presentation: 42 Years of applied wastewater field and leadership experience spanning facilities from 1 to 62 MGD. Provided consulting services for facilities spanning 1 to 360 MGD.

Education (High School, Upgrades, Colleges and Degrees): High School Diploma Southwestern High Baltimore MD 1974  
BS Environmental Science Frostburg State University Frostburg MD 1979

Professional Registration/Certification: Oregon Grade 4 WW License 13401, Utah Grade 4 License 6842R1205194

Also held highest grade certs for ABC 4 , VA 1, CT 4, MA (State appointed Grade 7)

Related papers/instruction you have presented:

Title: Effective Recruiting for X Gen Date: 8/05 Event: AWWA-WEF Virginia Conference

Title: The Evolving Organization Date: 11/05 Event: WEF Journal

Professional Organizations/Activities: Member of Utah WEAU Date: 2014

Member of the Oregon Association of Water Resources Date: 2016

Course sponsor: Jacobs Engineering Group, Inc

Signature of Instructor:  Date: 11/29/2021

**DO NOT WRITE BELOW THIS LINE**

Date Evaluated: \_\_\_\_\_ By: \_\_\_\_\_ Approved: Yes \_\_\_\_\_ No \_\_\_\_\_

Return Completed Form To: OESAC CEU COMMITTEE  
P.O. Box 577  
Canby, OR 97013-0577

Email: [info@oesac.org](mailto:info@oesac.org)  
Phone: 503-698-6486



## Level 2 Wastewater Operator Course

OMFS Training Series  
2021 Syllabus Course Description  
Operations Group

Revision	Date	Description	Author	Checked	Reviewed	Approved

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### Executive Summary

The OMFS Technical Services Group, in conjunction with the Operations Group, approved an initiative to gather historical and institutional training materials to reconstruct and reconfigure our Operations and Management (O&M) Training Program. This Program was mandated to be convenient and practical for busy Projects and Operators. In addition to providing institutional materials, this Program will create new formats and content flow, coupled with innovative approaches and coaching delivery.

Program accountability will provide training program participant tracking, signature attendance and quiz/test scores.

Our Training Program is mandated to be accredited by all Regulatory Authorities within the States in which Jacobs operates facilities. The ABC accreditation program has been retired. As a result, specific accreditation requirements are defined State-by-State. Training course materials will be delivered in the format requested by each State. Participating States will assign CEU values or equivalent. Jacobs will utilize an internal framework to file training materials, enrolled participants, participant attendance signatures and completed quiz/test scores.

Our training program has been prioritized to “go live” as soon as possible and be incorporated into Jacobs eLearning. It is expected the Training Program will quickly evolve to reflect the needs of the Operations Group and Leadership.

# 1. Course Syllabus Description

The *Level 2 Wastewater Operator Course* was developed with the Operator who has been in the field for more than a year. This course is not intended to compete with industry recognized technical training courses (i.e., *Water Otter*, or *University of California Sacramento Ken Kerri Courses*), nor is it intended to compete with group learning tools like (*Jacobs Operator Bookshelf*).

The *Level 2 Wastewater Operator Course* is instead intended to provide the individual Operator with State recognized CEU valued Modules, containing foundational wastewater information and practices that are applied and relatable to the unique Projects we serve, with active, visual examples. In this course the Operator will be introduced to:

- a) Wastewater Characteristics
- b) More detailed Activated Sludge Biology
- c) Activated Sludge Treatment Challenges
- d) Asset Descriptions
- e) Proven Operator Industry Standard Field Practices
- f) Industry Standard Record Keeping and Reporting Practices
- g) Compliment and Support other Jacobs Training Programs

The *Level 2 Wastewater Operator Course* consists of 13 Modules designed to take approximately 1 hour/Module to review and complete at the Operator's convenience. Each Module will include:

- Simple Text (designed for ease of reading and comprehension)
- Content Examples
- Content Diagrams
- Module Quiz

Each Module encourages and provides examples of technical materials that can be practiced until confidence and material is understood and retained. Course retention is critical. Technical Coaches will be provided to help Operators understand and practice/apply what they have learned.

Each Module will require the Operator to fill out an attendance sheet that includes Course title, Module title, date, printed name, certification number, and signature. The Project Manager (or designee) will be required to ensure Operators are utilizing the course material appropriately and successfully applying what they have learned in the field.

The Course content and brief description is provided in the Appendix.

## 2. Module Lesson Plan

The *Level 2 Wastewater Operator Course* is a self-paced series of *PowerPoint* presentations designed to allow the participant the opportunity to read course materials and then observe or experience examples of the content. The *PowerPoint* presentations will provide pop up answers to questions and provide math exercises encouraging repetitive practice. Each Course Module will have a Module ending Quiz that will be scored and tracked.

The learning environment will be in a quiet area, furnished with a desktop, or laptop computer loaded with the assigned Module files. The Project Manager will be responsible for providing the Operator with a computer, assigned Modules, Sign-In Sheet, and other materials (calculator, scratch paper for notes and computations) and will collect the quiz after completion.

Upon completing all 13 Modules, the Operator will be given a Project Leadership proctored 100 question Final Exam. The Final Exam will serve to confirm Operator retention of the Modules and may be utilized as part of the Operator Performance Program internally known as e3.

### **3. Program Tracking and Accountability**

The Training Administrator, or corporate software framework will score and store the Module Quizzes. Scores will be made available to the participants, as well as to Project Manager and Regional Leadership. A qualified subject matter Coach will be assigned to those participants showing a need for specific Course help, which can be defined within the tracked Quiz scores, or Final Exam score. Operators will be given the Course material objectives as part of their annual performance objectives.



## Appendix A. Course Module Descriptions

The following Modules are offered in the recommended progression:

Module	Description	Duration
Module 1 – Pretreatment	This Module describes wastewater characteristics as review and further defines Pretreatment design intentions. This Modules reviews Biochemical Oxygen Demand (BOD) BOD calculations and applied pounds loading math and potential environmental impact.	1 Hour
Module 2 – Activated Sludge	This Module describes Activated Sludge biology, chemistry identifier organisms and process control and several approaches to wasting to control mixed liquor health.	1 Hour
Module 3 – Activated Sludge Design	This Module describes applied Activated Sludge design schemes and operation. Including fixed film, suspended media, and membrane treatment.	1 Hour
Module 4 – Activated Sludge Equipment	This Modules describes Activated Sludge support systems and equipment including blowers, diffusers, and pumps.	1 Hour
Module 5 – Nutrient Removal	This Module describes nitrogen and phosphorus chemical and biological removal.	1 Hour
Module 6 – Secondary Clarifiers	This Module describes Secondary Clarifier design and impacts under normal and abnormal flow scenarios.	1 Hour
Module 7 – Disinfection	This Module describes common methods of disinfection and disinfection systems.	1 Hour


## Level 2 Wastewater Course Syllabus

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Module	Description	Duration
Module 8 – Solids Thickening	This Module describes the common designs and methods utilized to thicken sludge prior to sludge digestion.	1 Hour
Module 9 – Solids Digestion	This Module describes Aerobic and Anaerobic Digestion designs, biology, chemistry, and process control parameters.	1 Hour
Module 10 – Dewatering	This Module describes the common methods of sludge dewatering and field practices to optimize dewatering and equipment care.	1 Hour
Module 11 – Odor Control	This Module describes odor control applications and equipment used throughout a wastewater facility.	1 Hour
Module 12 – Electrical	This Module describes basic electrical power supplies and transformer step down to field voltages. The Module also covers electrical safety features and applications. This Module introduces instrumentation that is expanded in the following Module 13.	1 Hour
Module 13 – Instrumentation	This Module describes basic instrumentation terms, control loops and the relationship with SCADA.	1 Hour
Final Exam	100 question final exam.	3 Hours
Total		16 Hours

## Appendix B. Course Completion Sign Off Sheet

Upon completion of each Module, the Operator must legibly print their name and provide a valid signature, certification number and date to receive credit. The Project Manager is responsible for Attendee enrollment. The Attendee must commit to full participation, and application of acquired knowledge towards individual professional growth. The Program Administrator will file the signature sheets.

 Learning & Talent Management		<b>Course Completion Sign-Off Sheet</b> State: __ Course # _____ Operator Name _____		
Module	Start Date	Completion Date	Hours to Complete	Supervisor Signature
Module 1 – Pretreatment				
Module 2 – Activated Sludge				
Module 3 – Activated Sludge Design				
Module 4 – Activated Sludge Equipment				
Module 5 – Nutrient Removal				
Module 6 – Secondary Clarifiers				
Module 7 – Disinfection				
Module 8 – Solids Thickening				
Module 9 – Solids Digestion				
Module 10 – Solids Dewatering				
Module 11 – Odor Control				
Module 12 - Electrical				
Module 13 – Instrumentation				
I understand that it is encumbant upon me to complete all modules in this Course and that Jacobs verifies and audits the completion of training by employees. My signature indicates that I personally reviewed and completed all portions of this Course and no one has completed any portion of this course on my behalf.				
_____ Operator Signature		_____ DD/MM/20YY Date		_____ # Operator License #

## Appendix C. Wastewater Certificate of Completion

Upon completion of the Course, the Project Administrator will complete this Certificate and will provide a copy to the Operator for their records. The Operator is responsible for submitting this Certificate to the State. The Program Administrator can assist, if needed. When required, this form will be customized to include State specific information.



**Jacobs**

**CERTIFICATE OF COMPLETION**

**First Last Name**

has successfully completed:

**Level 2 – Wastewater Operator Course**

Awarded \_\_\_\_\_ CEU  
Course ID # \_\_\_\_\_  
Operator Certification # \_\_\_\_\_

On \_\_\_\_\_ (Date)

**As reviewed and approved by:**

\_\_\_\_\_  
**John Dunty, Course Advisor**

## John W. Dunty, III, Senior Consultant

### OBJECTIVE OVERVIEW

Apply 42 years of public-private sector business experiences, towards understanding the water and wastewater skillset needs, providing innovative learning approaches towards practical applied understanding and long-term retention.

<b>Education   Qualifications</b>	B.S. Environmental Science, May 1979, Frostburg State College, Frostburg, MD
<b>Registrations   Certifications</b>	ABC Class 4 Wastewater (highest available certification) ABC Class 1 Laboratory Connecticut Class 4 (highest available certification) Maryland Class 5SA Wastewater (highest available certification) Massachusetts Grade 7 (highest available certification) Oregon Grade 4 (highest available certification) Utah Grade 4 (highest available certification) Virginia Class 4 (highest available certification)
<b>Memberships   Affiliations</b>	Member of the Florida Water Environment Association Member of New England Water Pollution Control Association Member of the Oregon Association of Water Resources Member of Utah WEAU Member of Utility Management Committee Member of VWEA Member of Water Environment Federation
<b>Publications</b>	Florida WEF Conference 2003 Delivered Paper "How to Select Equipment Guaranteed to be Popular with the Operator" AWWA-WEF Virginia Conference 2004 Delivered Paper "Are You Developing People for Optimum Performance or Just Providing Skills Training?" WEF Journal (November 2004) "The Evolving Utility Organization" AWWA-WEF Virginia Conference 2005 "Effective Recruiting for the X Generation"

### RELEVANT PROJECT EXPERIENCE

***Jacobs Engineering – Senior Consultant - January 2018 to present***  
*9191 South Jamaica Street, Englewood, CO 80112*

*Providing O&M process control practices, troubleshooting, best practice procedure writing, practices training/coaching programs for utility services. Received Jacobs 2019 performance award from the Global Leadership Team for improvements made at Coos Bay & Sandy WWTP's.*

**Salt Lake City Public Utilities – Deputy WRF Manager 1/2016 – 1/2018**

1365 West 2300 North Salt Lake City 84116

*Provided daily program leadership including O&M activities, pretreatment, laboratory services, capital project planning, regulatory reporting, and budgeting. Developed learning programs incorporating classroom and supportive field coaching. Restructured traditional organization into a career ladder structure. Established leadership succession. Established project planning & scheduling workflow increasing labor accountability/productivity. Achieved a 70% exam passing rate (as compared to 12% State passing rate).*

**CH2MHill - Senior Consultant - 2/2012 to 12/2015**

9191 South Jamaica Street, Englewood CO 80112

*O&M leadership for water treatment, water distribution, metering, reclaim and non-potable irrigation, wastewater collection, wastewater treatment, solid waste sanitation and commercial chiller services including 120 personnel.*

**Empathic Solutions – Private Consultant – 2/2010 to 2/2012**

25542 Lido Ave, Mt. Plymouth, Florida 32776

*Best practice training program development, NPDES permit renewals and business development services for public and private sector utilities. Clients also included oil & gas well assessment & stimulation service and environmental and stormwater troubleshooting.*

**American Water-Acciona Agua – General Manager – 2/2009 to 2/2010**

13051 Wyandotte Road, Gibsonton, Florida 33574

*Leadership and facilitation to the American Water Acciona Agua joint venture, operating the largest sea water desalination facility in the western hemisphere with an annual operating budget of \$19.7 million, including significant rehabilitation programs achieving final performance milestones.*

**Severn Trent Environmental Services – Senior Area Manager – 8/2007 to 2/2009**

601 Country Club Road, Kissimmee, Florida 34742

*Managed Toho Water Authority owned Poinciana Utility Water and Sewer System serving 75,000, representing the largest contract operation project in STES' North American portfolio including a \$6 million annual budget, 56 employees, stormwater treatment, distribution and billing, wastewater treatment and collection. Provided operation services for the City of Longwood, the town of Celebration and the Barefoot Bay Gas Utility in total, serving more than 35,000 residents.*

**Government Services Group Inc. – Operations Manager – 7/2005 to 8/ 2007**

280 Wekiva Springs Road, Longwood Florida, 32779

*Managed 26 water, wastewater, and stormwater systems operated by 110 contracted employees. Executed \$300 million in capital projects including: water, water distribution, wastewater treatment, wastewater collection, lift stations, storm water and other related infrastructures. Project management included all aspects of budgeting, design and project development, coordination, contract facilitation, legal notices, pre-construction planning, construction phase inspections, management and work site protocol and safety.*

**Personal Performance Development – Vice President – 5/2003 to 7/2005**

25542 Lido Avenue, Mt. Plymouth Florida, 32776

Organizational and training program development consulting for a variety of public and private sector clients including, winning a \$1.6 million contract designing a unique practical examination tool to re-certify water and water distribution operators for the Province of Ontario Canada.

**EMA Inc. – Senior Consultant II – 4/2001 to 5/2003**

2180 West SR 434 Suite 6100, Longwood Florida, 32779

Applied O&M consulting services for public and private clients within the water and wastewater industry, including organizational optimization and change programs, facility, and skill assessments, as well as training program development.

**City of Ocala Florida – Deputy Director – 4/2000 to 4/2001**

Provided leadership for 3 Divisions: Water, Wastewater, Storm Water, Laboratory, and Industrial Monitoring. Responsibilities included administration, budget development, and capital planning for a 24 MGD water plant and 2 wastewater reclamation facilities. Administered a new FOG program producing over \$1 million in annual revenues. Oversaw expansion of the Environmental Services including a \$19.5-million construction of an 8.5 MGD wastewater facility. Reduced staff of 83 to 65 through attrition and improved work practices.

**Hazen & Sawyer PC – Operations Consultant – 8/1999 to 4/2000**

Provided municipalities with development of best internal practices. Projects varied from small town facilities of less than 30 personnel to large regional facilities more than 750 personnel including Broward County Florida water, wastewater, engineering, and billing, WASA Blue Plains Wastewater Treatment Facility and Ocala Florida Environmental Services.

**Arlington County WPCD – Superintendent – 8/1994 to 8/1999**

3402 S. Glebe Road, Arlington Virginia 22202

Provided leadership to 45 Operators and coordination-support for 150 employees serving a 57 MGD advanced wastewater facility. Improved plant BNR capabilities to 4 seasons, initiated an internal operator competency and training program, increased operator certification to over 85%, structured a business-process tracking system, assisted in reducing FY 97 budget by over \$1 million and reduced operations staff by 19 FTE's over 2 years.

**Wheelabrator EOS, Hampton, NH – Project Manager – 8/1985 to 8/1994**

Provided contracted services to wastewater facilities, collection systems and stormwater systems. Brought West Haven CT facility back to NPDES compliance within 1 month of contract startup. Reduced sewer rates by \$5.00/household in the 4.5 MGD North Haven CT facility. Trained and obtained licensure for all North Haven CT employees in 1 year. Created a non-profit environmental community group. Assisted in writing/presenting a series of technical manuals for the 370 MGD Blue Plains Washington DC wastewater facility.

**Little Patuxent Wastewater Treatment Plant – Operator I/II/III – 9/1980 to 8/1985**

Howard County DPW – Savage, MD

Learned/applied fundamental field operations, laboratory, maintenance, and supervisory skills at the 15 MGD advance tertiary facility. Obtained Class A wastewater certification in 18 months.