WAG-130005 C-4 Scanned 11/06/19

JUL 1 1 2019

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Quinault National Fish Hatchery
3 Sockeye Rd.
Humptulips, WA 98552

In Reply Refer to:
Josh Homer

Memorandum

June 28, 2019

TO: USEPA Region 10, OWW-101

FROM: Josh Homer, Quinault National Fish Hatchery Manager

SUBJECT: 2018 Annual Report

During the 35 day government shutdown I was not permitted to work on the 2018 NPDES Annual Report and following my return to work have been busy catching up with fish propagation and the added work of dealing with our most demanding fish rearing season. I have endeavored to complete this annual report in as timely a manner as possible once I returned to full duty and was able to fulfill my other duties.

For more information, please contact Mr. Josh Homer, Quinault National Fish Hatchery Manager, at (360) 288-2508 or josh_homer@fws.gov.

Sincerely,

Josh Homer

I CIS 7/19/19 JR

Annual Report of Operations for Year 2018

To comply with NPDES General Permit No. WAG130000 for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country within the Boundaries of the State of Washington

NPDES # for your Facility:
WAG130005

Facility & Owner Information

Facility Name: Quinault National Fish Hatchery	
Operator Name (Permittee): US Fish and Wildlife Service	
Address: 3 Sockeye Rd. Humptulips, WA 98552	
Email: josh_homer@fws.gov	Phone: 360-288-2508
Owner Name (if different from operator):	
Email:	Phone:

Best Management Practices (BMP) Plan

Has the BMP Plan been reviewed this year? ■ Yes ☐ No

Does the BMP Plan fulfill the requirements of the General Permit? ■ Yes ☐ No

Summarize any changes to the BMP Plan since the last annual report. Attach additional pages if necessary.

The BMP plan is currently undergoing revision, but has not been finalized. Only minor changes are planned that will bring the document up to current protocols and procedures.

Operations and Production

Total harvestable weight produced in the past calendar year in pounds (lbs): 238,175

Pounds of food fed to fish during the maximum month: 14,503

List the species grown or held at your facility and the annual production of each in gross harvestable weight. If fish were released rather than harvested, list the weight at time of release.

Species	Fish Produced	Receiving Water(s) to which Fish were Released	Month Released/ Spawned
Coho Salmon	667,663	Cook Creek - 50,409 lbs.	April
Chum Salmon	2,193,328	Cook Creek - 4,762 lbs.	April
Steelhead Salmon	198,485	Cook Creek - 33,712 lbs.	April
Steelhead Salmon	522,995	Transferred to Quinault Tribe -	Sept-Oct
		18,222 lbs.	
Mixed Adults	21,845	Cook Creek Return - 130,070 lbs.	Oct.-Jan.

Fill in the table below with production numbers from the past year. List the **maximum** amount of fish on-site and the maximum amount of food fed **per month**.

Month	Total Fish (lbs)	Fish Feed (lbs)	Month	Total Fish (lbs)	Fish Feed (lbs)
January	55,564	4,338	July	22,580	7,659
February	65,145	5,666	August	38,245	14,503
March	77,858	11,676	September	52,731	14,482
April	86,741	7,774	October	40,808	6,712
May	7,395	2,900	November	47,009	6,132
June	14,641	4,591	December	51,998	4,748

Additional Comments: Returning adults were removed from holding ponds, euthanized, and transferred to an off-site processor. Some pond morts were buried onsite.

Solid Waste Disposal

Describe the solid waste disposed of during the calendar year (including fish mortalities).

Type of Solid Disposed	Date Disposed	Location Disposed
Salmon - Rwy. Morts and Spawned	1 Jan. - 31 Dec.	Buried on site
Fish Detritus/Sediment From ILSB	1 Jan. - 31 Dec.	Pumped to Lagoon
Fish Detritus/Sediment from Rwy.	1 Jan. - 31 Dec.	In-Line Settling Basin

Additional Comments:

Fish Mortalities

Include a description and the dates of mass mortalities in the past year (more than 5% per week). Attach additional pages, if necessary. Include total mortalities from all causes.

Date	Cause of Deaths	Steps Taken to Correct Problem	Pounds of Fish
N/A			

Additional Comments:

Noncompliance Summary

Include a description and the dates of noncompliance events (including spills), the reasons for the incidents, and the steps taken to correct the problems. Attach additional pages, if necessary.

N/A

Inspections & Repairs for Production & Wastewater Treatment Systems

Date Inspected	Date Repaired	Description of System Inspected and/or Repaired
10 Aug		Sand Settling basin inspected
1 March	~Spring 2019	ILSB pumps checked and flushed, one pump found inoperable in Sept. and is out for repair.
When Possible	As Necessary	Rwy mud valves and isolation valves

Aquaculture Drugs and Chemicals

Please indicate whether you used each drug/chemical **during the past calendar year**.
Describe the use of each drug/chemical in more detail on the following pages.

Used in the past year?	Drug or Chemical
☐ Yes ☒ No	Azithromycin
☐ Yes ☒ No	Chloramine-T: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Chlorine
☐ Yes ☒ No	Draxxin
☐ Yes ☒ No	Erythromycin - injectable
☐ Yes ☒ No	Erythromycin - medicated feed
☐ Yes ☒ No	Florfenicol (Aquaflor)
☒ Yes ☐ No	Formalin - 37% formaldehyde: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Herbicide - describe:
☐ Yes ☒ No	Hormone - describe:
☐ Yes ☒ No	Hydrogen Peroxide: ***See additional reporting requirements on page 7***
☒ Yes ☐ No	Iodine: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Oxytetracycline
☐ Yes ☒ No	Potassium Permanganate: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Romet
☐ Yes ☒ No	SLICE (emamectin benzoate)
☐ Yes ☒ No	Sodium Chloride - salt
☐ Yes ☒ No	Vibrio vaccine
☐ Yes ☒ No	Other:
☐ Yes ☒ No	Other:

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Parasite-S		Generic Name: Formaldehyde	
Reason for use: preventative for fungus on eggs and to treat epizootic infections of fish			
■ Preventative/Prophylactic ■ As-needed	Total quantity of formulated product per treatment (specify units): Varies	Total quantity of formulated product used in past year (specify units): 162.9 gallons	
Date(s) of treatment: 1 Jan. - 31 Dec. as necessary			Total number of treatments in past year: 917
Maximum daily volume of treated water:	Treatment concentration (specify units): 1670-167 ul/l	Duration and frequency of treatment(s): As needed - 15 min.eggs, 60 min. fish	
Method of application:	☐ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	■ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Brand Name: Ovadine		Generic Name: Iodine	
Reason for use: Egg disinfectant, foot baths, tool disinfection, wader disinfection			
■ Preventative/Prophylactic ■ As-needed	Total quantity of formulated product per treatment: Varies	Total quantity of formulated product used in past year (specify units): Approximately 55 gallons	
Date(s) of treatment: 1 Jan. - 31 Dec.			Total number of treatments in past year: Unknown
Maximum daily volume of treated water:	Treatment concentration (specify units): 75-100 ppm	Duration and frequency of treatment(s): 30-60 minutes for eggs	
Method of application:	■ Static Bath ☐ Flow-through	☐ Medicated Feed ■ Other (describe): Surface disinfection	
Location in facility chemical was used (check all that apply):	■ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	■ Other (describe): On the grass
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: Foot baths and disinfectant toted allowed to go clear (inert) and drained to the lawn.			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Flow-Through Treatments	
Tank Volume	93,710 Liters
Calculated Flow Rate	568 Liters/Minute
Duration of Treatment	60 Minutes
Desired Flow-Through Treatment Concentration of Product	167,000 (167 ppm) µg/L
Amount of Product to Add Initially	15.6 Liters of Parasite-S Liters Product
Amount of Product to Add During Treatment	94.7 mL/Minute
Total Volume of Product Needed	21.3 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 167 ul/l Active Ingredient: 61.8 ppm formaldehyde Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	7,781,760 gpd Specify Units
Maximum % of Facility Discharge Treated	5.28% (4 rwys treated/day) % of Total Discharge

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments		
Tank Volume	707.9	Liters
Desired Static Bath Treatment Concentration	(100 ppm) or 100,000	µg/L
Volume of Product Needed	7079	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 10 ml/l Active Ingredient: 100 ppm iodine	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	14,829,120 gallons/day	Specify Units
Maximum % of Facility Discharge Treated	12.6*10^-6	% of Total Discharge

Flow-Through Treatments		
Tank Volume		Liters
Calculated Flow Rate		Liters/Minute
Duration of Treatment		Minutes
Desired Flow-Through Treatment Concentration of Product		µg/L
Amount of Product to Add Initially		Liters Product
Amount of Product to Add During Treatment		mL/Minute
Total Volume of Product Needed		Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient:	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day		Specify Units
Maximum % of Facility Discharge Treated		% of Total Discharge

Changes to the Facility or Operations

Describe any changes to the facility or operations since the last annual report.
No changes were made this year.

Signature and Certification

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

Joshua D Homer	Hatchery Manager
Printed name of person signing	Title
	6/28/19
Applicant Signature	Date Signed

Submittal Information

Send the complete, signed information, along with any attachments, to the following address:

U.S. EPA Region 10, OWW-191

Washington Hatchery Annual Report

1200 Sixth Avenue, Suite 900

Seattle, WA 98101-3140

Quinault NFH - 2018 Annual Report concentration calculations

Formalin – Charged Flow Through, 60 Minutes

Raceway rearing volume measurements 73' long x 16' wide x 34" deep = 3,309 ft^3
-ft^3 to liters – 3,309 * 28.3168 = 93,710 liters
Flow = 635 gpm
-gpm to liter/min – 635 * 3.79 = 2400 lpm

Charge to add

(volume in l * concentration in ul) / (conversion from ul to L) = charge volume in Liters

(93,710 * 167) / (1000*1000) = 15.6 liter

Metered to add

(flow in L/min * concentration in ul) / (conversion from ul to mL) = amount to add per minute

(2400 * 167) / (1000) = 400.9 ml/min
400.9 * 60 = 24,054 ml = 24.05 L
24.05 + 15.6 = 39.65 liters per treatment
Formalin at 37% formaldehyde – 37 grams formaldehyde in 100 mL solution

Ovadine – Static Bath, 30 Minutes

75 ppm available iodine using solution of 10 % Povidone iodine with 1% available iodine

7.5 ml Ovadine in 1 liter water = 75 ppm available iodine

Stock solution of 65 gallons made using 1,843 ml Ovadine. Individual trays filled from stock solution. A maximum of 30 trays filled in a single day in 2017, 30 trays at 3 gallons per tray (maximum volume, usually closer to 2.5 gallons), 90 gallons total (341.1 liters).

CHEMICAL LOG SHEET

(SEE ALSO THE REQUIREMENTS IN THE ANNUAL REPORT)

Facility Name: Quinault National Fish Hatchery

NPDES Permit#__WAG130005__

Flow Through Chemical Treatments															
Date	Vessel(s) Treated	#of Vessels Treated at a Time	Chemical Name1	Active Ingredient	% AI	Amount Applied/ Vessel	Units	Duration of Treatment	Treatment Type2	Treatment Conc. (ppm)	Flow Treated (cfs)	Total Effluent Flow (cfs)	Effluent Conc. Solution (ppb)	Effluent Conc. AI (ppb)	Person reporting
1/1/2018	Nopad	3	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.1	9,633	3,564	Josh Homer
1/1/2018	Redd Zone	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/1/2018	Heath	11	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	7,064	2,614	Josh Homer
1/2/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/3/2018	Nopad	3	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.1	9,633	3,564	Josh Homer
1/3/2018	Redd Zone	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/3/2018	Heath	11	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	7,064	2,614	Josh Homer
1/4/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/5/2018	Nopad	1	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.1	3,211	1,188	Josh Homer
1/5/2018	Redd Zone	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/5/2018	Heath	13	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	8,349	3,089	Josh Homer
1/6/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	3,211	1,188	Josh Homer
1/7/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	3,211	1,188	Josh Homer
1/8/2018	Nopad	2	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.1	6,422	2,376	Josh Homer
1/8/2018	Redd Zone	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/8/2018	Heath	13	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	8,349	3,089	Josh Homer
1/9/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	3,211	1,188	Josh Homer
1/10/2018	Nopad	2	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.1	6,422	2,376	Josh Homer
1/10/2018	Redd Zone	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/10/2018	Heath	12	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	7,706	2,851	Josh Homer
1/11/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	642	238	Josh Homer
1/11/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/12/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	642	238	Josh Homer
1/12/2018	Heath	7	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	4,495	1,663	Josh Homer
1/13/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	642	238	Josh Homer
1/13/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/14/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	642	238	Josh Homer
1/14/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/15/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	642	238	Josh Homer
1/15/2018	Heath	7	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	4,495	1,663	Josh Homer
1/16/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	642	238	Josh Homer
1/16/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/17/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	642	238	Josh Homer
1/17/2018	Heath	7	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	4,495	1,663	Josh Homer
1/18/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/18/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/19/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/19/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/20/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/20/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
1/21/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/21/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer

1/22/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/22/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,927	713	Josh Homer
1/23/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/23/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,927	713	Josh Homer
1/24/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/24/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/25/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/25/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,927	713	Josh Homer
1/26/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/26/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,927	713	Josh Homer
1/27/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/27/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,927	713	Josh Homer
1/28/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/28/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,927	713	Josh Homer
1/29/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/29/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,927	713	Josh Homer
1/30/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/30/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,927	713	Josh Homer
1/31/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	1,284	475	Josh Homer
1/31/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.1	2,569	950	Josh Homer
2/1/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/1/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/2/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/2/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/2/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/3/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/3/2018	H/T	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/4/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/4/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/4/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/5/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/5/2018	H/T	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/6/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	599	222	Josh Homer
2/6/2018	H/T	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/6/2018	SS Tanks	3	Ovadine	Iodine	1%	189	mL	15	Clean	167	0.0445603	24.78	899	9	Josh Homer
2/7/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	599	222	Josh Homer
2/7/2018	H/T	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/8/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	599	222	Josh Homer
2/8/2018	H/T	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	3,592	1,329	Josh Homer
2/9/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/9/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/10/2018	H/R	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/10/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/11/2018	H/R	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/11/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/12/2018	H/R	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/12/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/13/2018	H/R	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/13/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/14/2018	H/R	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,197	443	Josh Homer
2/14/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/15/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer

2/15/2018	H/R	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/15/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/16/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/16/2018	H/R	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/16/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/16/2018	SS Tanks	1	Ovadine	Iodine	1%	76	mL	15	Clean	67	0.0445603	24.78	120	1	Josh Homer
2/17/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/17/2018	H/R	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/17/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/18/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/18/2018	H/R	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/18/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/20/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/20/2018	H/R	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/20/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/21/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/21/2018	H/R	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	1,796	665	Josh Homer
2/21/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,395	886	Josh Homer
2/22/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/22/2018	Redd Zone	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	599	222	Josh Homer
2/22/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/23/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/23/2018	Redd Zone	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	599	222	Josh Homer
2/23/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/24/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/24/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/25/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/25/2018	Redd Zone	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	599	222	Josh Homer
2/25/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/26/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/26/2018	Redd Zone	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	599	222	Josh Homer
2/26/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/27/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/27/2018	Redd Zone	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	599	222	Josh Homer
2/27/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
2/28/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	24.78	599	222	Josh Homer
2/28/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	24.78	2,993	1,108	Josh Homer
3/1/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/1/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/2/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/2/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/3/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/3/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/4/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/4/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/5/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/5/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,116	783	Josh Homer
3/5/2018	Trough	1	Ovadine	Iodine	1%	379	mL	15	Clean	667	0.0222802	35.06	424	4	Josh Homer
3/6/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/6/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	423	157	Josh Homer
3/6/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,116	783	Josh Homer
3/7/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer

3/7/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	423	157	Josh Homer
3/7/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,116	783	Josh Homer
3/8/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/8/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	423	157	Josh Homer
3/8/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,116	783	Josh Homer
3/9/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/9/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	423	157	Josh Homer
3/9/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/10/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/10/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	423	157	Josh Homer
3/10/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/11/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/11/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	423	157	Josh Homer
3/11/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/12/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/12/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	423	157	Josh Homer
3/12/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	1,693	626	Josh Homer
3/13/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/13/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	423	157	Josh Homer
3/13/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	1,693	626	Josh Homer
3/15/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/15/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	1,693	626	Josh Homer
3/16/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/16/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/17/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/17/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,116	783	Josh Homer
3/18/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/18/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/19/2018	Trough	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	666	0.0222802	35.06	423	157	Josh Homer
3/19/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,116	783	Josh Homer
3/20/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,116	783	Josh Homer
3/21/2018	Heath	8	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	3,385	1,252	Josh Homer
3/21/2018	Trough	2	Ovadine	Iodine	1%	1,136	mL	15	Clean	2,001	0.0222802	35.06	2,543	25	Josh Homer
3/22/2018	Heath	8	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	3,385	1,252	Josh Homer
3/23/2018	Heath	8	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	3,385	1,252	Josh Homer
3/24/2018	Heath	8	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	3,385	1,252	Josh Homer
3/25/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/26/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/27/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/28/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/29/2018	Heath	6	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	2,539	939	Josh Homer
3/31/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	35.06	1,269	470	Josh Homer
4/1/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	34.33	1,296	480	Josh Homer
4/2/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	34.33	1,728	640	Josh Homer
4/3/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	34.33	1,728	640	Josh Homer
4/4/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	34.33	432	160	Josh Homer
4/5/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	34.33	432	160	Josh Homer
4/6/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	34.33	432	160	Josh Homer
5/7/2018	SS Tanks	1	Ovadine	Iodine	1%	113	mL	15	Clean	100	0.0445603	18.26	244	2	Josh Homer
9/21/2018	RW E6	1	Formalin	Formaldehyde	37%	24,000	mL	60	Flush	705	0.3342023	12.04	19,558	7,236	Josh Homer
9/21/2018	RW E2-5	4	Formalin	Formaldehyde	37%	24,000	mL	60	Flush	705	0.3342023	12.04	78,230	28,945	Josh Homer
9/24/2018	RW E4-5	2	Formalin	Formaldehyde	37%	18,000	mL	60	Flush	528	0.3342023	12.04	29,336	10,854	Josh Homer

9/25/2018	RW E2-3	2	Formalin	Formaldehyde	37%	18,000	mL	60	Flush	528	0.3342023	12.04	29,336	10,854	Josh Homer
10/30/2018	Redd Zone	1	Ovadine	Iodine	1%	1,704	mL	15	Static	5,003	0.0133681	22.9	2,920	29	Josh Homer
10/31/2018	Redd Zone	1	Formalin	Formaldehyde	37%	473	mL	15	Flush	1,666	0.0111401	22.9	811	300	Josh Homer
11/1/2018	Redd Zone	2	Ovadine	Iodine	1%	1,704	mL	15	Static	5,003	0.0133681	22.95	5,828	58	Josh Homer
11/2/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/5/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/7/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/7/2018	Heath	1	Ovadine	Iodine	1%	113	mL	15	Static	499	0.0089121	22.95	194	2	Josh Homer
11/7/2018	Gilles SS	1	Ovadine	Iodine	1%	2,068	mL	15	Static	3,036	0.0267362	22.95	3,536	35	Josh Homer
11/8/2018	Heath	2	Ovadine	Iodine	1%	113	mL	15	Static	499	0.0089121	22.95	388	4	Josh Homer
11/8/2018	Gilles SS	1	Ovadine	Iodine	1%	3,450	mL	15	Static	5,064	0.0267362	22.95	5,900	59	Josh Homer
11/9/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/9/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/9/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	646	239	Josh Homer
11/10/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	646	239	Josh Homer
11/11/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	646	239	Josh Homer
11/12/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	646	239	Josh Homer
11/13/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/13/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/13/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	646	239	Josh Homer
11/14/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/14/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/14/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	646	239	Josh Homer
11/15/2018	Heath	1	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	646	239	Josh Homer
11/15/2018	Heath	3	Ovadine	Iodine	1%	113	mL	15	Static	499	0.0089121	22.95	582	6	Josh Homer
11/16/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/16/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/16/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/17/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/18/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/19/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/19/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/19/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/20/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/21/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/21/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/21/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/22/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/23/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/23/2018	Redd Zone	2	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	1,943	719	Josh Homer
11/23/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/24/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/25/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/26/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/26/2018	Redd Zone	3	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	2,914	1,078	Josh Homer
11/26/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/27/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/28/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/28/2018	Redd Zone	2	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	1,943	719	Josh Homer
11/28/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/29/2018	Heath	2	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	1,293	478	Josh Homer
11/29/2018	Redd Zone	1	Ovadine	Iodine	1%	1,704	mL	15	Static	5,003	0.0133681	22.95	2,914	29	Josh Homer

11/29/2018	Heath	11	Ovadine	Iodine	1%	113	mL	15	Static	499	0.0089121	22.95	2,133	21	Josh Homer
11/30/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	22.95	3,878	1,435	Josh Homer
11/30/2018	Redd Zone	5	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	22.95	4,857	1,797	Josh Homer
11/30/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	22.95	2,586	957	Josh Homer
12/1/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/2/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/3/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/3/2018	Redd Zone	5	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	4,827	1,786	Josh Homer
12/3/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/4/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/5/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/5/2018	Redd Zone	5	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	4,827	1,786	Josh Homer
12/5/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/6/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/7/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/7/2018	Redd Zone	5	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	4,827	1,786	Josh Homer
12/7/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/8/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/9/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/10/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/10/2018	Redd Zone	5	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	4,827	1,786	Josh Homer
12/10/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/11/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/11/2018	Redd Zone	1	Ovadine	Iodine	1%	1,704	mL	15	Static	5,003	0.0133681	23.09	2,896	29	Josh Homer
12/11/2018	Heath	20	Ovadine	Iodine	1%	113	mL	15	Static	499	0.0089121	23.09	3,855	39	Josh Homer
12/12/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/12/2018	Redd Zone	4	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	3,862	1,429	Josh Homer
12/12/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	3,212	1,189	Josh Homer
12/13/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/14/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/14/2018	Redd Zone	6	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	5,792	2,143	Josh Homer
12/14/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	3,212	1,189	Josh Homer
12/15/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/16/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/17/2018	Gilles SS	1	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	1,927	713	Josh Homer
12/17/2018	Redd Zone	5	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	4,827	1,786	Josh Homer
12/17/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/19/2018	Nopad	2	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.09	6,425	2,377	Josh Homer
12/19/2018	Redd Zone	5	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	4,827	1,786	Josh Homer
12/19/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/20/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/20/2018	Heath	10	Ovadine	Iodine	1%	113	mL	15	Static	499	0.0089121	23.09	1,927	19	Josh Homer
12/21/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/21/2018	Redd Zone	4	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	3,862	1,429	Josh Homer
12/21/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	3,212	1,189	Josh Homer
12/22/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/23/2018	Heath	3	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	1,927	713	Josh Homer
12/24/2018	Nopad	3	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.09	9,637	3,566	Josh Homer
12/24/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/24/2018	Redd Zone	4	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	3,862	1,429	Josh Homer
12/24/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/25/2018	Heath	5	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	3,212	1,189	Josh Homer

12/27/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/28/2018	Nopad	3	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.09	9,637	3,566	Josh Homer
12/28/2018	Gilles SS	2	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	3,855	1,426	Josh Homer
12/28/2018	Redd Zone	4	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	3,862	1,429	Josh Homer
12/28/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/29/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer
12/31/2018	Nopad	3	Formalin	Formaldehyde	37%	1,890	mL	15	Flush	1,665	0.0445603	23.09	9,637	3,566	Josh Homer
12/31/2018	Gilles SS	1	Formalin	Formaldehyde	37%	1,134	mL	15	Flush	1,665	0.0267362	23.09	1,927	713	Josh Homer
12/31/2018	Redd Zone	2	Formalin	Formaldehyde	37%	568	mL	15	Flush	1,668	0.0133681	23.09	1,931	714	Josh Homer
12/31/2018	Heath	4	Formalin	Formaldehyde	37%	378	mL	15	Flush	1,665	0.0089121	23.09	2,570	951	Josh Homer