PUBLIC HEALTH DIVISION
Office of Environmental Public Health, Drinking Water Program
Kate Brown, Governor

Oregon Health Authority
800 NE Oregon St.
Portland, Oregon 97232-2162
Voice (971) 673-0405
FAX or TTY (971) 673-0694

May 5, 2017

Peter Olson, PE
Keller Associates, Inc.
707 13th Street SE, #208
Salem, OR 97301

Re: City of Amity (PWS #00041) Corrosion Control Chemical Feed System Status Update (PR#87-2012)

Dear Mr. Olson,

Thank you for submitting the plan review checklist (received on May 2, 2017 and attached to this letter), which addresses the construction conditions in my Conditional Approval letter dated August 4, 2016.

Thank you for letting me know that the treatment system consisting of soda ash injection for the control of copper corrosion began operating on April 28, 2017 and work is underway to optimize the dose as indicated through sampling of water quality parameters and lead and copper tap samples. It is understood that orthophosphate is not being used at this time, but may be added depending upon how effective the soda ash is in reducing copper levels.

Please provide:

1. Documentation that the soda ash being used complies with NSF Standard 60 (e.g., product specification sheet showing ANSI/NSF-60 certification).

2. Documentation (e.g., make and model of analytical equipment or equipment specification sheet) that the City has the proper equipment needed to measure water quality parameters (pH and alkalinity). A temperature-compensating, electrode-type pH meter must be used and calibrated at least once each day of readings or per manufacturer's recommendations.

3. Documentation an operation and maintenance (O&M) manual has been provided to the operators. E-mailing a scanned copy or photograph of the manual cover page and table of contents will suffice as we do not need a full copy of the O&M manual.

As requested, sampling requirements are described below and are updated to reflect soda ash only at the start of treatment on April 28, 2017.

Sampling needed to demonstrate the effectiveness of the soda ash corrosion control treatment is as follows:

Water Quality Parameter Sampling Requirements:
Effective April 28, 2017, begin monitoring pH and alkalinity according to OAR 333-061-0036(2)(c)(F)(i), (ii) and (iv) and as specified below:

- pH and alkalinity will need to be collected at two sites in the distribution system at the same time as each of the two rounds of lead and copper tap water monitoring (described below). Please provide the street address of where this sampling is conducted. Sampling should occur at sites representative of the entire distribution system. Existing coliform sampling sites may be used.
- pH and alkalinity will also need to be collected at the entry point to the distribution system (Entry Point "D" following all treatment for the South Yamhill River source) every two weeks and continuing until optimal water quality parameters are specified by the Authority.

Within the next year (prior to or by April 28, 2018), optimal water quality parameters will be set for pH and alkalinity for the point-of-entry and for the distribution system. On-going monitoring will also need to be completed for these parameters. I have enclosed forms and instructions to use for reporting pH and alkalinity data.

Lead and Copper Tap Sampling Requirements:
Two consecutive demonstration rounds of sampling taken at 20 sample sites is initially required after treatment is installed as specified in OAR 333-061-0036(2)(c)(A) and (B). Future tap sampling monitoring may be reduced to once every three years at 10 sample sites, depending upon the results of the demonstration rounds.

- The first demonstration round of monitoring at 20 sample sites will need to be conducted no later than June 30, 2017 with the results reported to our office by July 10, 2017, however, if water quality parameter sampling indicates the distribution water quality (e.g., pH and alkalinity) has not stabilized and more time is needed to complete sampling please contact me as soon as possible to discuss the possibility of shifting this sampling to sometime between July 1st and October 31st, 2017.

- The second demonstration round of monitoring at 20 sample sites will need to be conducted between July 1 and December 31, 2017 with the results of the monitoring reported to our office no later than January 10, 2018.

- You may use Form 141-A (enclosed) to document the selection of sample sites. Enclosed is a list of sites previously reported in the past.

Please contact me at 971-673-0419 if you have any questions regarding the contents of this letter or would like this information in an alternate format. Thank you for your cooperation in this matter.

Sincerely,

Evan Hofeld, P.E. OHA - Drinking Water Services

Cc: Mark Gunter, City of Amity

Encl: *Plan review check list received May 2, 2017*
List of tap sample sites from December 2016 sampling
Form 141-A
pH and Alkalinity Reporting Forms
Project Description

Plan Review Checklist

Corrosion Control Treatment (PR#87-2012)
(PWS ID#00041)
AMITY, CITY OF

Plan Review Checklist

	YES	NO	DATE
1. Was the project undertaken? If so, what was the starting date?	☒	☐	8/18/16 Quotes solicited for Equipment
2. If project was not undertaken, has the project been abandoned?	☐	☐	
3. Was the project completed? If so, when? If project not complete, estimated completion date:	☒	☐	4/28/16
4. If completed, was the work accomplished in conformance with all conditions listed in the Conditional Approval letter and DWP Construction Standards, Oregon Administrative Rule (OAR) 333-061-0050? Please make it clear how all conditions specified in the Conditional Approval letter were met on plans or on a separate sheet(s).	☒	☐	
5. If the project was completed, were there any differences between what is shown on the plans and what was actually installed?	☐	☒	
6. If the completed project is different from what is shown on the plans, were the plans modified to show as-built conditions?	☐	☐	
7. Have as-builts been sent to Drinking Water Program?	☐	☐	
8. Are the facilities operating? If so, starting when?	☒	☐	4/28/16

RECEIVED
MAY 02 2017
Data Mgmt & Compliance
Drinking Water Program

Signature of Engineer: [signature] Date: 5/1/17

Name: PETER OLSEN Phone: 503-364-2002

Title: CITY ENGINEER

Firm: KELLER ASSOCIATES

Comments: Only Soda Ash is connected and currently being injected. Zinc orthophosphate will not be injected unless sampling/testing results indicate the need.

4100041 AMITY, CITY OF

List of lead and copper tap sample sites and copper results

Copper Sample Site	May-13	Nov-13	Jun-14	Dec-14	Aug-15	Nov-15	June-16	Dec-16
510 Nursery St (7)	0.064	0.215		0.088	0.108	0.234	0.052	0.114
570 Nursery St (1)			0.101					
410 Wolfe (3) - resample May'13 = ND	0.247	0.465	0.288					
4116 SE Amity (8)	0	0.007	0	0.031	0.054	0.06	0.010	0.006
5435 SE Amity (7)		0.255	0.12	0.034	0.181	0.741	0.081	0.097
306 2nd St (8)	0.529	1.47	0.818	0.654	0.137	1.412	0.187	0.147
803 Goucher St (8)	0.021	0.038	0.024	0.083	0.044	0.097	0.011	0.037
210 Sherman St (7)	1.19	1.76	0.926	0.736	0.744		0.158	1.21
3601 SE Rice Ln (8)	1.008	0.171	0.072	0.081	0.043	0.072	0.048	0.100
607 Getchell (7)		0.934	0.109	0.157	0.201	0.305	0.028	0.033
707 Getchell (6)			0.0094	0.006	0.011	0.018	0	0.024
412 Wolfe (6)	0.024	0.041	0.023	0.056	0.027			0.069
Methodist Church (2)	0.347	1.47						
1216 Jellison (7)	0.432	0.225	0.135		0.071	0.351	0.024	0.120
101 Jellison (8)	0.464	0.219	0.287	0.129	0.115	0.257	0.023	0.101
903 Jellison (8)	0.026	0.041	0.026	0.016	0.068	0.174	0.018	0.057
212 Woodson (6)	0.097	0.125	0.168		0.104	0.173		0.063
390 N Trade (7)	0.093	0.078	0.077	0.105	0.074		0.100	0.067
404 Getchell (4)	0.691	0.71	0.735	0.983				
408 Getchell (4)					0.134	0.107	0.018	0.062
107 S Trade (8)	0.476	0.691	0.377	0.287	0.327	0.284	0.089	0.369
212 Woodson #A (2)				0.047			0.039 (Aug)	
1217 S Jellison (1)				0.246				
109 Getchell (8)	0.274	1.1	0.618	0.949	1.1	2.091	0.098	0.554
911 S Jellison (8)	0.194	0.42	0.573	0.248	0.229	0.266	0.086	0.261
505 Getchell (1)	0.03							
408 Wolfe (5)				0.052	0.037	0.059	0.013	0.035
100 First St (1)							0.282	
415 Nursery St (1) Lead pigtail removed in Feb 2016. Pre-removal sample on 1/27/16. (pre-removal results were 0.0015 mg/l for lead and 0.188 mg/l for copper)							0.188 (1/27/16)	

Form 141-A

Monitoring Guidance for Public Water Systems

Form 141-A Page 1 of 3

SAMPLE SITE IDENTIFICATION AND CERTIFICATION

System's Name: City of Amity Type: ✓ CWS ___ NTNCWS

Address:
Attn: Mark Gunter
PO BOX 159
Amity, OR 97101

Size:
___ >100,000
___ 10,001 to 100,000
___ 3,301 to 10,000
✓ 501 to 3,300
___ 101 to 500
___ ≤100

Telephone Number: (503) 835-4181
System ID#: 00041
Contact Person: Mark Gunter

CERTIFICATION OF SAMPLING SITES

LEAD SOLDER SITES

# of single-family structures with copper pipes with lead solder installed after 1982 or lead pipes and/or lead service lines (Tier 1) ___

# of multi-family structures with copper pipes with lead solder installed after 1982 or lead pipes and/or lead service lines (Tier 1) ___

# of buildings containing with copper pipes with lead solder installed after 1982 or lead pipes and/or lead service lines (Tier 2) ___

# of sites that contain copper pipes with lead solder installed before 1983 (to be used only if other conditions have been exhausted) (Tier 3)

TOTAL ___

The following sources have been explored to determine the number or structures which have Interior lead pipe or copper pipe with lead solder.

___ Plumbing and/or building codes
___ Plumbing and/or building permits
___ Contacts within the building department, municipal clerk's office, or state regulatory agencies for historical documentation of the service area development
___ Water Quality Data

Other Resources Which PWS May Utilize

___ Interviews with building inspectors
___ Survey of service area plumbers about when and where lead solder was used from 1982 to present
___ Survey residents in sections of the service area where lead pipe and/or copper pipe with lead solder is suspected to exist
___ Interviews with local contractors and developers

Explanation of Tier 2 and Tier 3 sites (attach additional pages if necessary)

Monitoring Guidance for Public Water Systems

Form 141-A (continued) Page 2 of 3

SAMPLE SITE IDENTIFICATION AND CERTIFICATION

CERTIFICATION OF SAMPLING SITES

LEAD SERVICE LINE SITES

# of samples required to be drawn from lead service line sites _____
# of samples actually drawn from lead service line sites _____
Difference (explain differences other than zero) _____

The following sources have been explored to determine the number or lead service lines in the distribution system.

_____ Distribution system maps and record drawings
_____ Information collected for the presence of lead and copper as required under §141.42 of the Code of Federal Regulations
_____ Capital improvement plans and/or master plans for distribution system development
_____ Current and historical standard operating procedures and/or operation and maintenance (O&M) manuals for the type of materials used for service connections
_____ Utility records including meter installation records, customer complaint investigations and all historical documentation which indicate and/or confirm the location of lead service connections
_____ Existing water quality data for indications of 'troubled areas'

Other Resources Which PWS Utilized

_____ Interviews with senior personnel
_____ Conduct service line sampling where lead service lines are suspected to exist but their presence is not confirmed
_____ Review of permit files
_____ Community survey
_____ Review of USGS maps and records
_____ Interviews with pipe suppliers, contractors, and/or developers

Explanation of fewer than 50% LSL sites identified (attach additional pages if necessary):
_____

CERTIFICATION OF COLLECTION METHODS

I certify that:

Each first draw tap sample for lead and copper is one liter in volume and has stood motionless in the plumbing system of each sampling site for at least six hours.

Each first draw sample collected from a singe-family residence has been collected from the cold water kitchen tap or bathroom sink tap.

Each first draw sample collected from a non-residential building has been collected at an interior tap from which water is typically drawn for consumption.

Each first draw sample collected during an annual or triennial monitoring period has been collected in the months of June, July, August or September.

Each resident who volunteered to collect tap water samples from his or her home has been properly instructed by (insert water system's name) _____ in the proper methods for collecting lead an copper samples. I do not challenge the accuracy of those sampling results. Enclosed is a copy of the material distributed to residents explaining the proper collection methods and a list of the residents who performed sampling.

Monitoring Guidance for Public Water Systems

Form 141-A (continued) Page 3 of 3

SAMPLE SITE IDENTIFICATION AND CERTIFICATION

RESULTS OF MONITORING

THE RESULTS OF LEAD AND COPPER TAP WATER SAMPLES MUST BE ATTACHED TO THIS DOCUMENT

# of samples required 20 # of samples submitted _____ 90th Percentile Pb _____
90th Percentile Cu _____

THE RESULTS OF WATER QUALITY PARAMETER SAMPLES MUST BE ATTACHED TO THIS DOCUMENT

# of samples required 2 # of tap samples submitted _____
# of entry point samples required 1 (2/mo) # of entry point samples submitted _____

CHANGE OF SAMPLING SITES

Original site address: _____

New site address: _____

Distance between sites (approximately): _____

Targeting Criteria: NEW: _____ OLD: _____

Reason for change (attach additional pages if necessary): _____

SIGNATURE _____

NAME _____ TITLE _____ DATE _____

Indicate Tier Level of Sites below (if used)

Copper Sample Site	Tier 1	Tier 2	Tier 3
510 Nursery St (7)	☐	☐	☐
570 Nursery St (1)	☐	☐	☐
410 Wolfe (3) - resample May'13 = ND	☐	☐	☐
4116 SE Amity (8)	☐	☐	☐
5435 SE Amity (7)	☐	☐	☐
306 2nd St (8)	☐	☐	☐
803 Goucher St (8)	☐	☐	☐
210 Sherman St (7)	☐	☐	☐
3601 SE Rice Ln (8)	☐	☐	☐
607 Getchell (7)	☐	☐	☐
707 Getchell (6)	☐	☐	☐
412 Wolfe (6)	☐	☐	☐
Methodist Church (2)	☐	☐	☐
1216 Jellison (7)	☐	☐	☐
101 Jellison (8)	☐	☐	☐
903 Jellison (8)	☐	☐	☐
212 Woodson (6)	☐	☐	☐
390 N Trade (7)	☐	☐	☐
404 Getchell (4)	☐	☐	☐
408 Getchell (4)	☐	☐	☐
107 S Trade (8)	☐	☐	☐
212 Woodson #A (2)	☐	☐	☐
1217 S Jellison (1)	☐	☐	☐
109 Getchell (8)	☐	☐	☐
911 S Jellison (8)	☐	☐	☐
505 Getchell (1)	☐	☐	☐
408 Wolfe (5)	☐	☐	☐
100 First St (1)	☐	☐	☐
415 Nursery St (1) Lead pigtail removed in Feb 2016.	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

LEAD SOLDER SITES

# of single-family structures with copper pipes with lead solder installed after 1982 or lead pipes and/or lead service lines (Tier 1) _____

# of multi-family structures with copper pipes with lead solder installed after 1982 or lead pipes and/or lead service lines (Tier 1) _____

# of buildings containing with copper pipes with lead solder installed after 1982 or lead pipes and/or lead service lines (Tier 2) _____

# of sites that contain copper pipes with lead solder installed before 1983 (to be used only if other conditions have been exhausted) (Tier 3)

TOTAL _____

LEAD AND COPPER RULE (LCR)--CORROSION CONTROL
WATER QUALITY PARAMETER (WQP) MONITORING & REPORTING (M/R)
INSTRUCTIONS AND BACKGROUND
(rev. 3/31/11)

GENERAL:

1. All systems that have installed chemical corrosion control must complete regular WQP M/R reporting.
2. The agency (County, State, or Dept of Ag) responsible for the system will designate the minimum WQP(s) for the system based on type of treatment and water chemistry.
3. Once a minimum WQP is established, the system will be sent current, pre-printed forms with their specific minimum WQP(s) listed. Two standardized forms for WQP M/R are in use: (1) Entry Point, and (2) Distribution. All minimum WQP(s) that have been set will be shown at the bottom right of the form.
4. Systems must maintain a minimum WQP to maintain compliance with the LCR.
5. The system must include the name of the person who filled out the WQP form and date of completion.

ENTRY POINT FORM:

1. Systems must measure their designated WQP(s) at least once every two weeks at each entry point (EP), and report the results monthly by the 10th of the following month (same as coliform results).
2. For each WQP reading at each EP, the system must either enter a single measurement for that day, or compute an averaged daily value. Only one reading per day should be provided on the form.
3. The system must record whether their individual readings met the minimum WQP previously established for compliance.
4. The system must total the number of times that their WQP fell below their established minimum (excursions) and record it in the box at the bottom of the page.

DISTRIBUTION FORM:

1. Systems need to complete this form when they complete their routine lead and copper tap samples. The form needs to be reported to the state by the same due date as these samples (January 10 or July 10). The frequency is the same as the system's Lead and Copper schedule and is based on the system population. The number required is pre-printed on your forms.
2. Distribution readings are generally collected at representative drinking water sites within the Distribution system (e.g. Coliform sites)
3. A separate Distribution Minimum WQP level is set (however, most of the time it will be the same as that set for the Entry Point).

If you would like this information in an alternate format contact Diane Weis at 971-673-0427

Oregon Health Authority

Water Quality Parameter Monitoring Form

Lead & Copper Rule Corrosion Control

Day	pH	Alk	Phos	Other	Y/N
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

(No = N = Excursion) **Total N's** ☐

<<Have minimums been met for this day?

ENTRY POINT

PWS ID: 41 ☐☐☐☐☐

System Name: _____

Entry Point: _____

Sample Period: _____
Month/Year

Number of excursions* during this month:____
(Count the number of days when any WQP was less than the minimum required)

Total excursions during the previous 5 months:___
(Over 9 excursions in 6 months is a violation. Entry Point and Distribution excursions are cumulative)

For OHA use only

Minimum Water Quality Parameters as set by

pH	☐	
Alk	☐	*(Alkalinity)*
PO4	☐	*(Orthophosphate)*
Other	☐	(_____)

Print Name: _____

Signature: _____

Date: _____

Send to DWP within 10 days after end of sampling period

OHA Drinking Water Program, PO Box 14350, Portland, OR 97293-0350
Phone (971) 673-0405 Website: http://healthoregon.org/dwp/

Oregon Health Authority

Water Quality Parameter Monitoring Form

Lead & Copper Rule Corrosion Control

ID #	Sample Location	pH	Alk	PO4	other	Y/N

(N = No = Excursion) **Total N's** ____

<Has sample met the minimums?

DISTRIBUTION

PWS ID: 41 ☐☐☐☐☐

System Name: ____________________

Sample Period: ____________________
Month/Year

Sample Frequency: ____________________

Distribution Samples required: ____

Number of excursions during this Sample Period = ____

(Number of locations when any WQP was less than the minimum.)

Note: Entry Point and Distribution Excursions are cumulative. Add Entry Point and Distribution Excursions to get total for sample period.

For OHA use only

Minimum Water Quality Parameters as set by

pH		
Alk		*(Alkalinity)*
PO4		*(Orthophosphate)*
Other		*(______________)*

Print Name: ____________________

Signature: ____________________

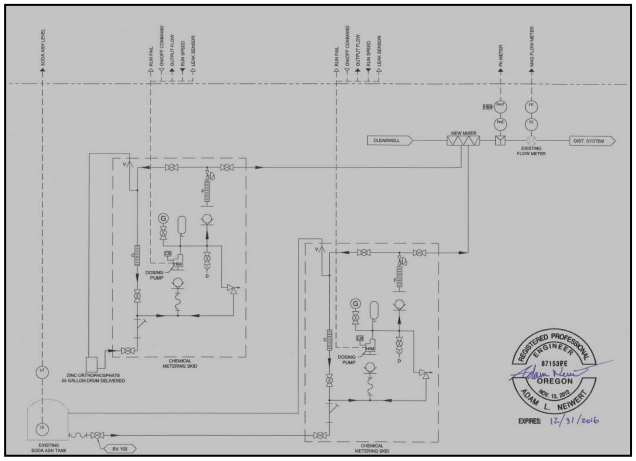
Date: ____________________

Send to Drinking Water Program within 10 days after end of sampling period:

OHA Drinking Water Program, PO Box 14350, Portland, OR 97293-0350
Phone (971) 673-0405 Website: http://healthoregon.org/dwp/

Project Description

The plans (Section 11305 - Corrosion Control Chemical Feed System, Section 17300 - SCADA Control Strategy, and Supplement P&ID EI-701) show the installation of two chemical metering skids, one of which is for soda ash and the other is for zinc orthophosphate as shown in the chemical dosage process and instrumentation diagram below:



A plan for corrosion control treatment titled *City of Amity 2012 Corrosion Control Plan* and dated May 30, 2012 developed by Keller & Associates was received by the Authority on May 30, 2012. The Corrosion Control Plan called for a multi-phased approach to raise the pH to first 7.8 and perhaps as high as 8.5 using soda ash (initial and secondary copper control strategies) or, if soda ash did not work, install zinc phosphate (tertiary copper control strategy). The Authority initially approved the Corrosion Control Plan on June 6, 2012 and granted a Conditional Approval for the project assigned Plan Review #87-2012.