



The Public Health Foundation of Columbia County

August 28, 2015

Dyno Nobel Inc. (PWS#4193427)
Alicia Kahl
63149 Columbia River Hwy
Deer Island, Oregon 97054

Subject: Corrective Action Required for Dyno Nobel Inc. to Address Source Water Fecal Contamination at SRC-AA Well#1 (field) colu3388

The Drinking Water Services (DWS) has verified recent monitoring which confirms fecal (*E. coli*) contamination at SRC-AA Well#1 (field) colu3388.

The results from recent monitoring at your water system are illustrated below:

Sample Date	Sample Type	Sample Location	Positive for Total Coliform	Positive for <i>E. coli</i>
8/11/15	Assessment	Well # 1	Yes	Yes
8/13/15	Confirmation	Well # 1	Yes	Yes (2/5)

Furthermore, DWS has reviewed the well log and found the well to be adequately constructed. The well has a casing seal completed into the confined aquifer that extends to a depth of 60 feet, meeting the minimum depth for the well to be constructed adequately. Since well #1 meets state construction standards, alteration or reconstruction of the well is not recommended. Please see results from source evaluation on pg.

Under the Groundwater Rule, Dyno Nobel Inc. must take corrective action to address the fecal contamination associated with the source. The water system will be required to have completed corrective action or be in compliance with an approved corrective action plan with a reasonable timeline by **December 21, 2015**.

If the water system fails to take action within the required time frame, notification must be provided to all persons served by the water system. A repeat public notice will be required every three months until all deficiencies are corrected or the water system is in compliance with an

approved corrective action plan. A copy of the public notice must be forwarded to DWS-DMCE at PO Box 14450, Portland, OR 97293-0450. You may also fax the report to (971) 673-0694 or email to dwp.dmce@state.or.us.

In order to comply with the Groundwater Rule and address the fecal contamination detected at your groundwater source, you have the following corrective action options for compliance:

1. Eliminate the source of fecal contamination associated with the well. In some cases, the source of fecal contamination can be identified and removed. Dyno Nobel Inc. would need to remove any obvious or suspected sources of fecal contamination, take measures to prevent the situation from recurring, and/or correct all significant deficiencies. Monthly raw water samples of the well may be required for up to 12 months afterwards to ensure the problem has been resolved.
2. Provide an alternate source of water. Either drill a new well or connect to a different well or public water system that meets all drinking water standards. Plan review is required prior to adding a new source; please contact DWS Plan Review at (971) 673-0408 to start that process. Formally abandoning the *E. coli* contaminated well may also apply.
3. 4.0-log Compliance monitoring. If effectively removing the source of fecal contamination or connecting to an existing well are not plausible solutions, compliance monitoring may be the appropriate corrective action. Under the Groundwater Rule, compliance monitoring means installing [or upgrading] chlorination with enough contact time to achieve 4.0-log viral inactivation, maintaining a minimum chlorine residual at the entry point at all times and reporting to the DWS on a monthly basis. Plan review is required prior to installing chlorination; please contact DWS Plan Review at (971) 673-0408 to start that process.

SRC- AA- Well # 1 must remain inactive and isolated until corrective actions are completed.

Under the Groundwater Rule timeline, you must contact me by October 2nd, 2015 and inform me which method of corrective action you have selected. By December 21, 2015, you must have completed this corrective action or be on an approved schedule towards its completion.

If you have any questions or concerns, or would like this in an alternate format, please contact me at 503-397-4651 X2006. I appreciate your immediate attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to be "Joel Ferguson", with a long horizontal flourish extending to the right.

Joel Ferguson, R.E.H.S.
Public Health Foundation of Columbia Co.
503-397-4651 X2006

GROUNDWATER RULE

Source
Evaluation
Form

The requesting agency staff should fill out the 1st page of the form electronically and provide all required supporting documents with the request submittal.

PWS Name: Dyno Nobel

PWS ID #: 41 93427

Source Name: Well # 1

County: Columbia

Entry Point/ Source ID: AA

Date Request sent to Springfield: 8-21-15

Requested by: Joel Ferguson, R.E.H.S.

Surface water w/i 500 ft¹: Yes No

Source Construction Review Request:

Township: 4N Range: 1W Section: 33

Or Lat: 45 54'46.31" Long: 122 49'35.93" (Bing Google Earth ArcGIS online)

Or Property Address: _____

Required Supporting Documents:

- Indicate that **E.coli in the source has been confirmed.**
- Indicate **distance to septic tanks, sewer lines, etc or other sanitary hazards.** see schematic
- If surface water is present within 500 feet of well/spring indicate **distance to surface water =** 500+
- Provided site plan map
- Provided copy of well log or Provide Date Well Completed **and one of the following:**
 - Date Well Completed: 1979
 - County Well ID: colu3388
 - Well Tag: L_____
 - Start Card: _____

Additional Comments/ Requests:

GROUNDWATER RULE

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Evaluation
Form

Supporting Documentation: this section is to be filled out by the Regional Hydrogeologist.

Nature of Aquifer Evaluation:

Confined aquifer

Semi-confined aquifer

Unconfined aquifer

Comments:

The aquifer has been identified as unconsolidated sand & gravel within the Columbia River Alluvium. According to the well log (COLU3388) water was first encountered at a depth of 80 ft and did not rise in the well bore indicating that the aquifer is unconfined.

As Built Source Construction Evaluation for Groundwater Rule:

Source construction is adequate, approved for use.

OWRD special construction standards
• see well log or Comments

Well construction is inadequate.

Not sealed to appropriate depth
Recommended depth: _____

Not appropriate seal materials

Seal info missing or unknown

Insufficient sealant volume

Insufficient annular space

Not appropriate seal

Additional Comments/ Requests:

The minimum depth requirement for placement of a casing seal into an unconfined aquifer is 18 ft. Dyno Nobel Well #1 has a casing seal that extends to a depth of 60 ft. Therefore, the casing seal on Dyno Nobel Well #1 exceeds current well construction standards.

GROUNDWATER RULE

Source
Evaluation
Form

Information below may be distributed to public water systems as an addendum to corrective action letter.

Reconstruct/Replacement Conclusions:

- Yes, reconstruct/replace as per comments.
- No, reconstruct/replacement not recommended as per comments, alternative Corrective Action is recommended.
- Not enough information to evaluate well/aquifer conditions, consider requiring video log and or GWUDI review.

Comments Regarding Reconstruct/Replacement Requirements: Dyno Noble Well #1 appears to exceed current well construction standards. Therefore, alteration/reconstruction of the well is not recommended.

Well construction requirements (unless otherwise specified) are designed to meet minimum construction standards. All requirements and optional recommendations (below) are designed with the intent to correct contamination deficiencies based on the provided documentation. In the event the source contamination is not corrected, additional measures will be required. **Water systems with a water right should consult with the Oregon Water Resources Department regarding special construction standards prior to submitting reconstruction/replacement plans to the Drinking Water Program for review.**

Optional Reconstruction Recommendations: _____

Above optional recommendations are not required actions but, in the opinion of the Drinking Water Program, could provide additional protective measures to reduce the risk of future viral contamination.

GWUDI Review:

- Yes, consider for GWUDI
Microscopic Particulate Analysis is required.
Implement interim 4-log treatment until MPAs are collected and analyzed. No additional corrective actions required.
- No, do not consider for GWUDI presently

MPA sample requirement triggered due to:

- Aquifer is fractured bedrock and surface water is within 500 ft
- Aquifer is coarse sand, gravel, and boulders and surface water is within 200 ft
- Aquifer is sand and gravel and surface water is within 100 ft
- Aquifer is sand and surface water is within 75 ft

MPA Analysis Results

- MPA analysis pending
- MPA analysis indicates source is groundwater, pursue corrective action under Groundwater Rule
- MPA analysis indicates source is surface water, pursue requirements under Surface Water Treatment Rule

Comments: There is no surface water present within 500 ft of the well.

GROUNDWATER RULE

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Reviewed by: Tom Pattee

Date: 08/27/2015