Jared Blumenfeld
Secretary for
Environmental Protection

Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
700 Heinz Avenue
Berkeley, California 94710-2721

Gavin Newsom
Governor

September 24, 2021

Mr. Neil Latt
Board Vice-President
Humboldt Bay Municipal Water District
828 Seventh Street, PO Box 95
Eureka, California 95502-0095
latt@hbmwd.com

RESPONSE TO COMMENTS
MCNAMARA & PEEPE LUMBER MILL SITE

Dear Mr. Latt:

Thank you for your letter regarding the McNamara & Peepe Lumber Mill site (Site) in McKinleyville, California, dated September 3rd, 2021, to Director Meredith Williams and Nicole Yuen of the Department of Toxic Substances Control (DTSC). We value the input we have received from the Humboldt Bay Municipal Water District's (District) Board of Directors. We have prepared this response to address the District's most recent comments and concerns.

1. McNord Lumber Mill

   The District has previously expressed concerns regarding potential contamination at the former McNord Lumber mill site, which is in proximity to the McNamara and Peepe site. DTSC has received the results of the soil and groundwater sampling conducted at the McNord Lumber Mill. We are currently evaluating the Site Investigation Report with a DTSC geologist and received the comment memo on September 24th.

2. Off-Site Sampling

   The District states that there are "continued findings of dioxin, TCP, and PCP in groundwater downgradient of McNamara and Peepe." However, in the two most recent sampling events which took place in August 2019 and March 2021, monitoring wells MW-10 and MW-11 did not have detected concentrations of pentachlorophenol (PCP) or tetrachlorophenol (TCP) exceeding laboratory detection

limits. MW-10 also did not have detected concentrations of dioxins, converted to a 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) Toxicity Equivalency (TEQ) value, exceeding the California Maximum Contaminant Level (MCL) or Public Health Goal (PHG) in the March 2021 sampling event; MW-11 was not analyzed for dioxins. The dioxin concentration was converted into a TEQ value, a weighted quantity measure based on the toxicity of each member of the dioxin and dioxin-like compounds category relative to the most toxic members of the category, using the 2005 World Health Organization Toxic Equivalency Factors. MW-10 is located off-Site on the south side of Glendale Drive; MW-11 is along the southernmost boundary of the Site.

The District also states that "surface water sampling results [show] dioxins being transported off site." We note that surface water sampling results from the February 2021 sampling event did not contain concentrations of TCDD exceeding laboratory detection limits. We compared the surface water sampling results for TCDD to the MCL which specifically applies only to TCDD, because we recognize the Mad River serves as a drinking water source for the District. The MCL for TCDD was not exceeded. The TCDD TEQ value also did not exceed the MCL.

DTSC understands that the District is concerned about potential dioxins impacts to Hall Creek and the Mad River and believes sampling needs to be conducted further downstream in both surface water and sediment. However, we note that dioxins are not unique to former operations at the Site, and are known to be created from residential fireplaces, from burning of garbage and yard waste, in charcoal-fueled grills, and from forest fires. Because there are other potential sources for dioxins in the environment beyond the Site and a limited budget, DTSC is committed to a phased approach for further investigation, with investigation limited to the Site and properties adjacent to the Site. We believe the most prudent and fiscally-responsible approach is to focus our efforts on remediating the source remaining in place at the Site which will address potential off-Site impacts by eliminating the source.

3. Ecological Risk Assessment

The Districted requested that environmental screening levels for aquatic species be considered. We requested a DTSC ecological toxicologist be assigned to this project to evaluate potential impacts to aquatic species. Due to internal workload reallocations, the toxicologist may not be able to evaluate the data until October 2021.

4. Tables and Figures in Reports

The District requested that "SHN include a map of both surface water and ground water sampling and contamination locations in reports" and that "SHN include TEQs in all analytical result tables." We will request SHN to show the collection locations of surface water and groundwater samples together in a single figure in future

reports. We will also request that SHN include TEQ calculations in results tables in future reports.

5. Bench Scale Laboratory Study

Due to unexpected staff reassignments for contact tracing and wildfire debris cleanup, the contracting work to revise the contract to include the bench scale and additional groundwater and surface water sampling took longer than expected.

DTSC is currently in the process of amending our contract with SHN to include the following:

- two additional rounds of surface water sampling
- two additional rounds of groundwater monitoring
- installation of 2 groundwater monitoring wells to the east of MW-1 to evaluate the extent of the plume
- contract with Prima Environmental to conduct a bench scale study to evaluate biodegradation methods of chemicals of concern in soil and groundwater

Once the contract amendment is signed, we will promptly present the District with an updated schedule for the fieldwork.

6. Public Outreach

The District requested clarification about the scheduling of a public meeting. DTSC will hold a virtual public meeting to present the results of the bench scale study and the next steps involving a pilot study at the Site.

7. Prioritizing the Site for Cleanup

The District asked if DTSC has prioritized the Site for cleanup. The Site has been identified as a priority under DTSC's Cleanup in Vulnerable Communities Initiative and we have received funding designated for remediation at the Site.

We appreciate your input and hope this response addresses your questions. We will also be on the call with the Board of Directors on October 4th, 2021. Please contact Nicole Yuen in the meantime by email at Nicole.Yuen@dtsc.ca.gov if you have any questions.

Sincerely,

Juliet C. Pettijohn

Julie Pettijohn, MPH, CIH
Branch Chief
Site Mitigation and Restoration Program – Berkeley Office

cc: John Friedenbach, Humboldt Bay Municipal Water District
friedenbach@hbmwd.com

Nicole Yuen, DTSC
Nicole.Yuen@dtsc.ca.gov

Director Meredith Williams, Ph.D., DTSC
Meredith.Williams@dtsc.ca.gov

HUMBOLDT BAY MUNICIPAL WATER DISTRICT

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COPY

September 3, 2021

Ms. Meredith Williams
Ms. Nicole Yuen
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710

RE: McNamara & Peepe Lumber Mill Site Investigations and Remediation

Dear Ms. Williams and Ms. Yuen,

We are writing to provide comments regarding SHN's groundwater analytical results from samples taken on March 5, 2021 in the Draft report provided to the District. The District appreciates your providing the Draft Report while we wait for it to be finalized, and your consideration of its concerns related to the potential for contamination arising from the former McNamara and Peepe Lumber Mill Site (Site) to migrate into the Mad River and contaminate the District's water supply for 88,000 people in Humboldt County. The Report documents the collection of groundwater samples from eight locations on and off the Site. The results of the sampling were tabulated in the Report (Table 2) as follow.

Table 2. Groundwater Analytical Results, March 5, 2021
Former McNamara and Peepe Lumber Mill, Arcata, California

Sample Location	2,3,7,8-TCDD[a] (pg/L)[b]	2005 WHO TEQ[c] (pg/L)	PCP[d] (ug/L)[e]	TCP[d] (ug/L)
MW-1	<0.941[f]	93.6	460	5.6
MW-5	<0.622	0.0361	18	0.81 J[g]
MW-7	NA[h]	NA	<0.30	<1.0
MW-8	NA	NA	<0.30	<1.0
MW-9	NA	NA	<0.30	<1.0
MW-10	<0.539	0.0438	<0.30	<1.0
MW-11	NA	NA	<0.30	<1.0
MW-12	<0.542	0.0284	120	<1.0
Dup (MW-10)	<0.601	0.0396	<0.30	<1.0
MCL[i]	30	NR[j]	1.0	NR
PHGs[k]	0.05	NR	0.3	NR

[a] 2,3,7,8-TCDD: 2,3,7,8-Tetrachlorodibenzodioxin was analyzed in general accordance with EPA Method 8290
[b] pg/L: picograms per Liter
[c] 2005 WHO TEQ: 2005 World Health Organization's Toxic Equivalency Factor

[d] Pentachlorophenol (PCP) and 2,3,4,6-Tetrachlorophenol (TCP) were analyzed in general accordance with National Council for Air and Stream Improvement, Inc. Method 86.07.
[e] ug/L: micrograms per liter
[f] <: "less than" the stated method detection limit
[g] J: Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximatevalue.
[h] NA: not analyzed
[I] MCL: maximum contaminant level, State Water Resources Control Board (March 13, 2019).
[j] NR: no reference
k PHGs: California public health goals, Office of Environmental Health Hazard Assessment (March 13, 2019).

The results were summarized in the Report as follow.

5.0 Summary of Results

The results of the March 5, 2021 groundwater monitoring event at the former McNamarra and Peepe mill are summarized below.

- 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD) was not detected at concentrations above laboratory detection limits in any samples collected during the sampling event.
- Chlorinated Phenols:
  - PCP was detected at concentrations exceeding the state maximum contaminant level (MCL) of 1 ug/L in MW-1, MW-5, and MW-12.
  - The maximum concentration of PCP detected in groundwater was in well MW-1 ata concentration of 460 µg/L.
  - TCP was detected in well MW-1 at a concentration of 5.6 µg/L and in well MW-5 at 0.81 µg/L (estimated concentration below the laboratory reporting limit, but above the method detection limit).
  - Chlorinated phenols were only detected in groundwater from wells directly adjacent to and downgradient from the cap. No chlorinated phenols were identified in wells located further downgradient of the cap (MW-10 and MW-11).

While 2,3,4,8-TCDD was not detected at concentrations above laboratory detection limits, there were significant findings of other dioxin compounds as shown in the results under the 2005 WHO TEQ column. MW-1 in particular, with a World Health Organization's Toxic Equivalency Factor of 93.6pg/L is alarming, especially with the recent surface water sampling results showing dioxins being transported off site. The report highlights the consistency of these findings with historical data, which is also extremely concerning as it shows a steady flow of contamination off Site, and years of inadequate action to address it.

With respect to investigation and remediation activities at the Site, the District understands that DTSC seeks to formulate a cost-effective remediation plan based on current contaminant levels in surface and ground water. While the District appreciates these efforts, we remain very concerned that contamination has potentially left the original Site and may be migrating into the Mad River. Given the continued findings of dioxin, TCP, and PCP in groundwater downgradient of McNamara and Peepe, additional sampling needs to be conducted by DTSC to fully characterize the extent of the contamination and ensure protection of HBMWD water supply wells, located in the floodplain of the Mad River approximately one mile downgradient, and to ensure protection of aquatic habitat.

Specifically, the District requests that DTSC conduct, at its expense, additional quarterly sampling until an effective rededication plan is formulated and successfully completed.

- Sampling needs to be conducted further downstream in both surface water and sediment to identify how far downgradient (and toward the Mad River) dioxins are moving. DTSC has a voluntary agreement with the owners of the McNord Lumber Mill site on the south side of Glendale Drive where the runoff is directed from McNamara and Peepe towards Hall Creek and then the Mad River. Sampling needs to be conducted quarterly to determine any seasonal variability.
- Sampling the water in wells that supply HBMWD customers should be conducted quarterly.
- Sampling sediment in both Hall Creek (away from power poles) and Mad River ought to be a priority - not just for protecting drinking water, but also for aquatic species. Sediment sampling should also be conducted on sediment recovered from the District's Turbidity Reduction Facility. Sediment sampling should be conducted on a quarterly basis.
- Environmental screening levels for aquatic species should be considered for comparison to the sampling results of water and sediment as well as the maximum contaminant levels and public health goals for drinking water.
- Have SHN include a map of both surface water and ground water sample and contamination locations in reports. Additionally, we request that you have SHN include TEQ's in all analytical result tables.

In our meeting with DTSC on March 19th, you committed to the following:

- You offered a timeline to conduct a benchtop study and pilot study this year. **(is this on track?)**
- Benchtop was to happen this summer. **(what is the status?)**
- Promised a public meeting about this matter. **(when will this be scheduled?)**
- Prioritizing the site for clean up if there was a release to surface water. **(which now has been documented) Have you prioritized the site for clean up?**

The TEQ levels in MW-1 have been increasing dramatically since 2005. This clearly indicates that the contamination is migrating off the site and is at contamination levels that need to be remediated immediately.

Thank you for your time and attention to this matter. We invite your staff to attend our September 9th board meeting at 9:15 a.m. to discuss your plans for this site with our directors. Please do not hesitate to contact us with any questions or concerns.

Respectfully,

Neal Latt,
Board Vice-President

cc: Meredith Williams, Director, DTSC
Humboldt County Board of Supervisors
Humboldt Baykeeper
Office of Governor Gavin Newsom
Jim Wood, Assemblymember, District 2
North Coast Regional Water Quality Control Board
John Ford, Director, Humboldt County Planning & Building
Grant Cope, Deputy Director, DTSC
Mike McGuire, Senator, District 2
California Department of Fish and Wildlife

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D., Director
700 Heinz Avenue
Berkeley, California 94710-2721

Gavin Newsom
Governor

September 16, 2021

Mr. Erik Nielsen
SHN Consulting Engineers & Geologists, Inc.
812 West Wabash Avenue
Eureka, California 95501
enielsen@shn-engr.com

Dear. Mr. Nielsen:

The Department of Toxic Substances Control (DTSC) has completed its review of the Groundwater Monitoring Report (Report), dated July 2021, for Former McNamara and Peepe Lumber Mill in Arcata, California (Site). The Report presents the details of the repair of monitoring well MW-5 which took place on February 12, 2021 as well as the results of the groundwater sampling event which took place at the Site on March 5, 2021. DTSC provided comments on previous drafts of the Report and the revised Report satisfactorily addresses DTSC's comments. DTSC hereby approves the Report.

If you have any questions, please contact me via email at Nicole.Yuen@dtsc.ca.gov.

Sincerely,

Nicole Yuen

Nicole Yuen
Project Manager
Site Mitigation and Restoration Program – Berkeley Office
Department of Toxic Substances Control

cc: John Friedenbach
Humboldt Bay Municipal Water District
friedenbach@hbmwd.com

Groundwater Monitoring Report

Former McNamara and Peepe Lumber Mill
1619 Glendale Drive
Arcata, California

Prepared for:

Department of Toxic Substances Control

July 2021
020189.030

Phone: (707) 441-8855 Email: info@shn-engr.com
Web: shn-engr.com • 812 W. Wabash Avenue, Eureka, CA 95501-2138

Phone: (707) 441-8855 Email: info@shn-engr.com Web: shn-engr.com
812 W. Wabash Avenue, Eureka, CA 95501-2138

Reference: 020189.030

July 21, 2021

Nicole Yuen
California Environmental Protection Agency
Department of Toxic Substances Control
700 Héinz Avenue
Berkeley, CA 94710

Subject: Groundwater Monitoring Report, Former McNamara and Peepe Lumber Mill, 1619 Glendale Drive, Arcata, California

Dear Nicole Yuen:

SHN has prepared this groundwater monitoring report for the former McNamara and Peepe Lumber Mill located in Arcata, California. SHN performed groundwater monitoring at the site on March 5, 2021, to assess for the presence of wood preservatives in groundwater. This report contains a description of field activities and a summary of results from groundwater sampling. SHN performed this work on behalf of the California Department of Toxic Substances Control.

Please call me at (707) 441-8855 if you have questions or comments regarding this groundwater monitoring report.

Sincerely,

SHN

Erik J. Nielsen, P.G., C.H.G.
Senior Hydrogeologist

EJN/WRB:lam

Enclosure: Report

Groundwater Monitoring Report

Former McNamara and Peepe Lumber Mill
1619 Glendale Drive
Arcata, California

Prepared for:
California Department of Toxic Substances Control

Prepared by:

812 W. Wabash Ave.
Eureka, CA 95501-2138
(707) 441-8855

July 2021

QA/QC: EJN ejn
Reference: 020189.030

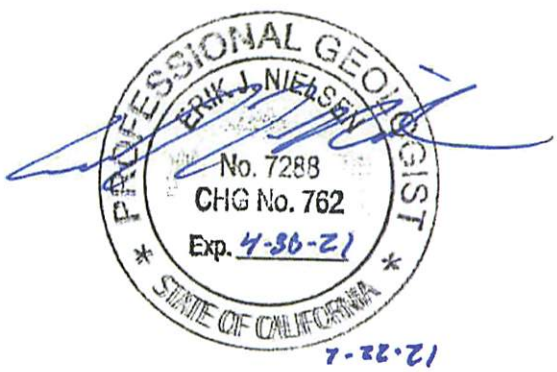

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Table of Contents

List of Illustrations

Abbreviations and Acronyms

Units of Measure

<	"less than" the stated laboratory reporting limit
mg/L	milligrams per liter
mV	millivolts
NTU	Nephelometric Turbidity Unit
pg/L	picograms per liter
ug/L	micrograms per liter
umhos/cm	micromhos per centimeter

Additional Terms

BTOC	below top of casing
DCO_2	dissolved carbon dioxide
DO	dissolved oxygen
DTSC	California Department of Toxic Substances Control
EC	specific conductance
EPA	U.S. Environmental Protection Agency
Fisch	Fisch Drilling
J	Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
MCL	maximum contaminant level
MDL	method detection limit
MW-#	monitoring well-number
NA	not analyzed
NAVD88	North American vertical datum, 1988
NCL	North Coast Laboratories
NR	no reference
ORP	oxidation-reduction potential
PCP	pentachlorophenol
PHGs	California public health goals
PVC	polyvinyl chloride
RL	reporting limit
TCDD	2,3,7,8- tetrachlorodibenzeno-p-dioxin
TCP	tetrachlorophenol
TEQ	toxic equivalency factor
WHO	World Health Organization

1.0 Introduction

This groundwater monitoring report has been prepared for the former McNamara and Peepe Lumber Mill, located at 1619 Glendale Drive, in Arcata, California (Figure 1). Groundwater sampling was conducted at the site on March 5, 2021, by SHN personnel. The intent of this monitoring program is to assess contaminant-impacted soil placed under a cap and its impacts to groundwater. This report contains a description of field activities, laboratory analytical results, and a summary of findings. SHN performed this work on behalf of the California Department of Toxic Substances Control (DTSC).

2.0 Site History

From 1967 to 1984, the use of a chemical fungicide containing pentachlorophenol (PCP) and tetrachlorophenol (TCP) occurred at the site to treat lumber. Spillage and drippings from the "green chain" fungicide application area are believed to have caused PCP and TCP contamination to soil and groundwater. In 1998, soils in the green chain area were consolidated and capped with an impervious layer (concrete) to prevent PCP and TCP detected in soil from being discharged to groundwater and surface water. The location of the concrete cap and site groundwater monitoring wells are shown in the former McNamara and Peepe Lumber Mill site plan on Figure 2.

3.0 Field Activities

This section describes activities that occurred at the site in February and March 2021.

3.1 Monitoring Well MW-5 Repair

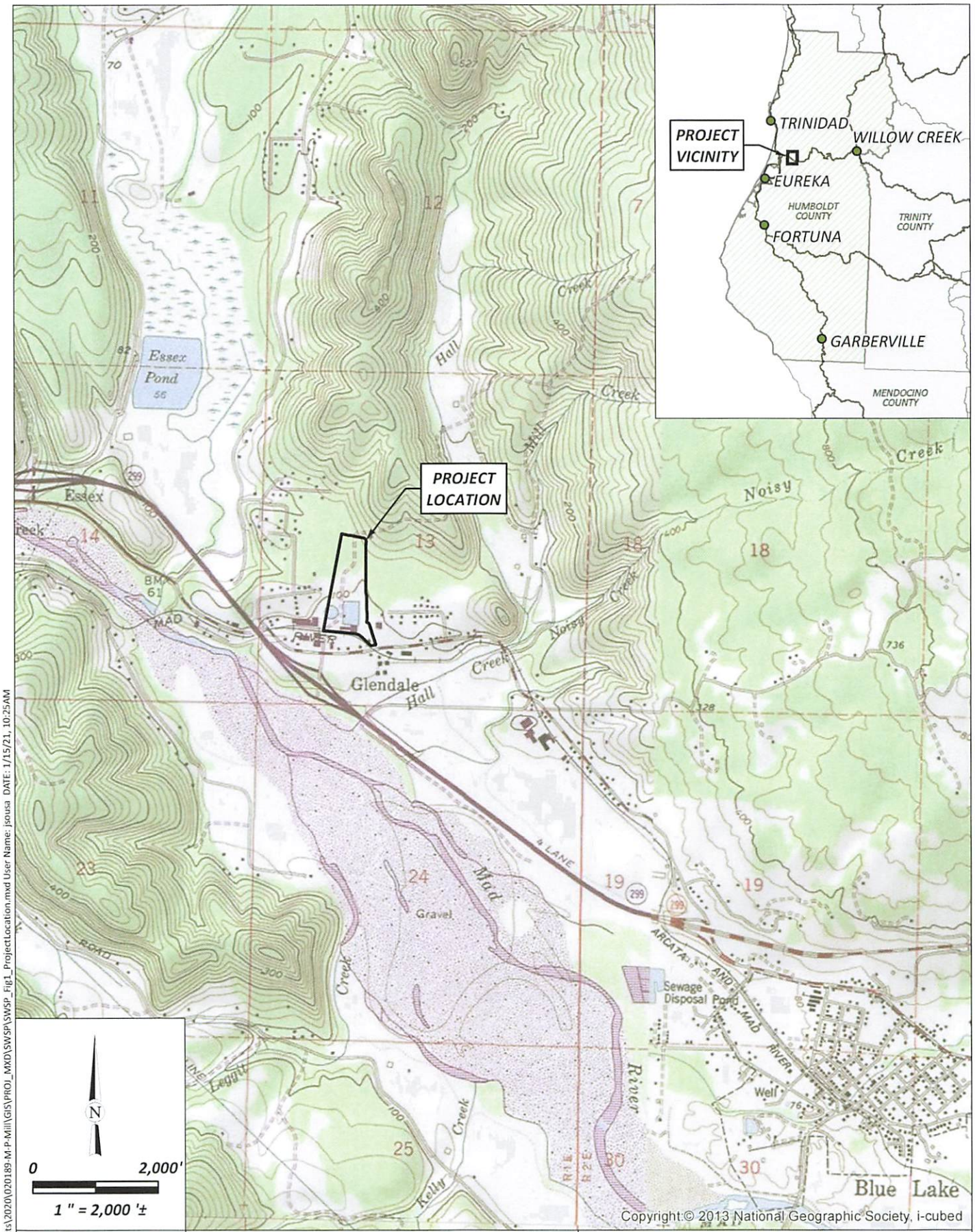
Monitoring well MW-5 was unable to be sampled during the previous site monitoring event in August 2019 due to a well lid that was sealed shut and unremovable. On February 12, 2021, SHN accompanied Fisch Drilling of Hydesville, California (Fisch) to assess well MW-5 conditions and determined replacement of the well box and lid would be required. The well box and collar for MW-5 were removed using a jackhammer and replaced with a new box set in concrete. The polyvinyl chloride (PVC) casing for monitoring well MW-5 was deemed to be in good conditions and the well was redeveloped by SHN personnel on February 18, 2021, prior to the scheduled monitoring event. Well MW-5 redevelopment water was stored onsite in 55-gallon drums and sampled for final disposition. Field notes for the February 2021 monitoring well repair and redevelopment are included in Appendix 1.

3.2 Monitoring Well Sampling

SHN conducted groundwater monitoring of the former McNamara and Peepe Lumber Mill site on March 5, 2021. Groundwater samples were collected from site monitoring wells MW-1, MW-5, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12. A field duplicate sample was collected from MW-10 during this sampling event. All noted monitoring wells were measured for depth-to-water before being purged and sampled. Site well construction details are summarized in Appendix 2, Table 2-1

Specific conductance (EC), pH, turbidity, and temperature were monitored periodically during purging activities using portable instrumentation. Groundwater from each well was also measured for dissolved carbon dioxide (DCO_2), dissolved oxygen (DO), and oxidation-reduction potential (ORP).

Prior to sampling, each well was purged of at least three casing volumes using low-flow sampling techniques. Wells were purged at low flow rates while maintaining minimal drawdown, until groundwater parameters stabilized. A groundwater sample was collected from each purged well using new tubing and a peristaltic pump. The water samples were put into laboratory-supplied containers, immediately placed into an ice-filled cooler, and submitted to the laboratory for analyses under appropriate chain-of-custody documentation. Field notes for the March 2021 monitoring event are included in Appendix 1.



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0 2,000'

1 " = 2,000 '±

Former McNamara & Peepe Lumber Mill
Storm Water Sampling Plan
Glendale Drive, Arcata, California

Project Location

SHN 020189.050

January 2021 | SWSP_Fig1_ProjectLocation | Figure 1

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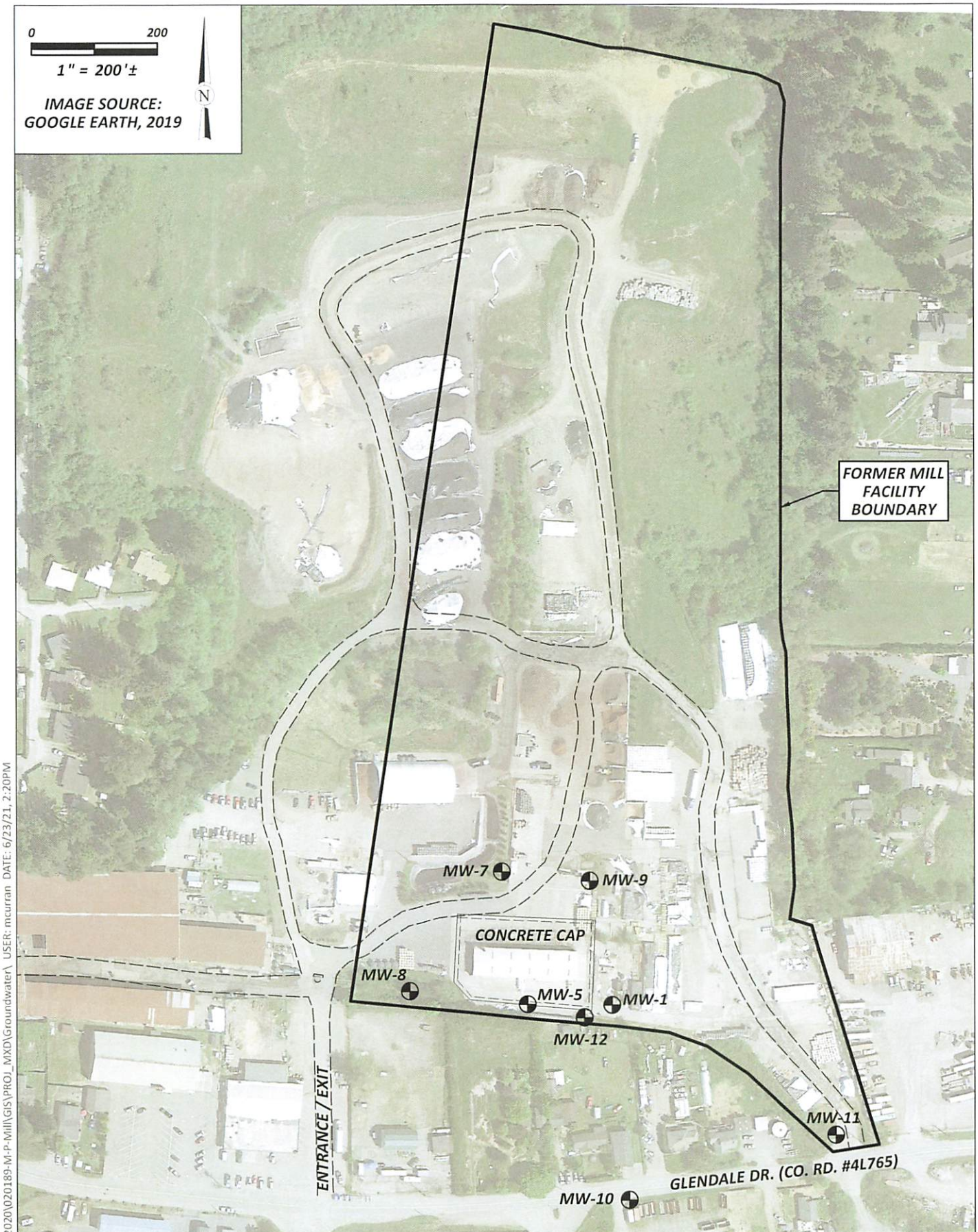

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SHN	Former McNamara & Peepe Lumber Mill Groundwater Monitoring 1619 Glendale Drive, Arcata, California	Site Plan SHN 020189.030
	June 2021 | GW_Fig2_SitePlan	Figure 2

3.3 Laboratory Analysis

Groundwater samples collected during the sampling event were analyzed for the following constituents:

- Chlorinated phenols (PCP and TCP) by National Council for Air and Stream Improvement, Inc. by Method 86.07
- Chlorinated dibenzodioxins and chlorinated dibenzofurans (dioxins and furans) by U.S. Environmental Protection Agency (EPA) Method 8290

PCP and TCP testing was completed by North Coast Laboratories, Ltd. (NCL) located in Arcata, California. The reporting limit (RL) and method detection limit (MDL) for each constituent are as follows:

- PCP: RL = 0.3 micrograms per liter (ug/L); MDL = 0.084 ug/L
- TCP: RL = 1.0 ug/L; MDL = 0.32 ug/L

Dioxin and furan testing was completed by Frontier Analytical Laboratory, located in El Dorado Hills, California. The RL for 2,3,7,8- tetrachlorodibenzeno-p-dioxin (TCDD) was 1.0 picograms per liter (pg/L) and the MDL was 0.364 pg/L. Both testing laboratories are California State certified.

3.4 Equipment Decontamination Procedures and Waste Handling

All monitoring and sampling equipment was cleaned prior to being transported to the site. All smaller equipment was cleaned using the triple wash system. The equipment was initially washed in a water solution containing Liquinox® cleaner, followed by two distilled water rinses.

All wastewater generated during decontamination of field-sampling equipment and well purge water was stored onsite in 55-gallon drums. A water sample was collected from the drums and submitted for laboratory testing. Two drums were removed from the site on July 8, 2021, by Kleen Solution Environmental. The liquids were characterized as non-hazardous and transported to the Kleen Solution facility in Rohnert Park, California for processing. The drum sampling laboratory analytical report and transport manifest for liquid disposal are provided in Appendix 3.

4.0 Groundwater Monitoring Results

This section summarizes the data collected at the site during the groundwater monitoring event.

4.1 Hydrology

SHN measured depth-to-groundwater in the monitoring wells during the groundwater monitoring event (Table 1). .

Table 1. Water Level Data, March 5, 2021
Former McNamara and Peepe Lumber Mill, Arcata, California

Sample Location	Top of Casing Elevation[a] (feet)	Depth-to-Groundwater (feet BTOC)[b]	Groundwater Elevation[a] (feet)
MW-1	90.92	5.08	85.84
MW-5	93.25	7.13	86.12
MW-7	98.90	11.53	87.37
MW-8	96.04	7.63	88.41
MW-9	99.65	8.72	90.93
MW-10	95.65	11.07	84.58
MW-11	91.70	6.19	85.51
MW-12	91.73	5.80	85.93

[a] Relative to North American Vertical Datum 1988 (NAVD88)
[b] BTOC: below top of casing

Based on groundwater elevation data from wells around the cap, groundwater flow direction was to the south-southeast with a gradient of 0.027 feet per foot. A groundwater contour map for the March 2021 monitoring event is presented as Figure 3. Historical groundwater elevation data is included in Appendix 2, Table 2-2.

4.2 Groundwater Analytical Results

Table 2 summarizes groundwater analytical results from the March 2021 sampling event and select groundwater concentrations are shown on Figure 4. Historical groundwater data is included in Appendix 2, Tables 2-3 and 2-4.

Table 2. Groundwater Analytical Results, March 5, 2021
Former McNamara and Peepe Lumber Mill, Arcata, California

Sample Location	2,3,7,8-TCDD[a] (pg/L)[b]	2005 WHO TEQ[c] (pg/L)	PCP[d] (ug/L)[e]	TCP[d] (ug/L)
MW-1	<0.941[f]	93.6	460	5.6
MW-5	<0.622	0.0361	18	0.81 J[g]
MW-7	NA[h]	NA	<0.30	<1.0
MW-8	NA	NA	<0.30	<1.0
MW-9	NA	NA	<0.30	<1.0
MW-10	<0.539	0.0438	<0.30	<1.0
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Dup (MW-10)	<0.601	0.0396	<0.30	<1.0
MCL[i]	30	NR[j]	1.0	NR
PHGs[k]	0.05	NR	0.3	NR

[a] 2,3,7,8-TCDD: 2,3,7,8-Tetrachlorodibenzodioxin was analyzed in general accordance with EPA Method 8290
[b] pg/L: picograms per Liter
[c] 2005 WHO TEQ: 2005 World Health Organization's Toxic Equivalency Factor
[d] Pentachlorophenol (PCP) and 2,3,4,6-Tetrachlorophenol (TCP) were analyzed in general accordance with National Council for Air and Stream Improvement, Inc. Method 86.07.
[e] ug/L: micrograms per liter
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[h] NA: not analyzed
[i] MCL: maximum contaminant level, State Water Resources Control Board (March 13, 2019).
[j] NR: no reference
k PHGs: California public health goals, Office of Environmental Health Hazard Assessment (March 13, 2019).

Appendix 3 includes the complete analytical test results, chain-of-custody documentation, and laboratory quality control data.

4.3 Field Measured Parameters

Groundwater field measurements from the March 2021 sampling event are included in Table 3.

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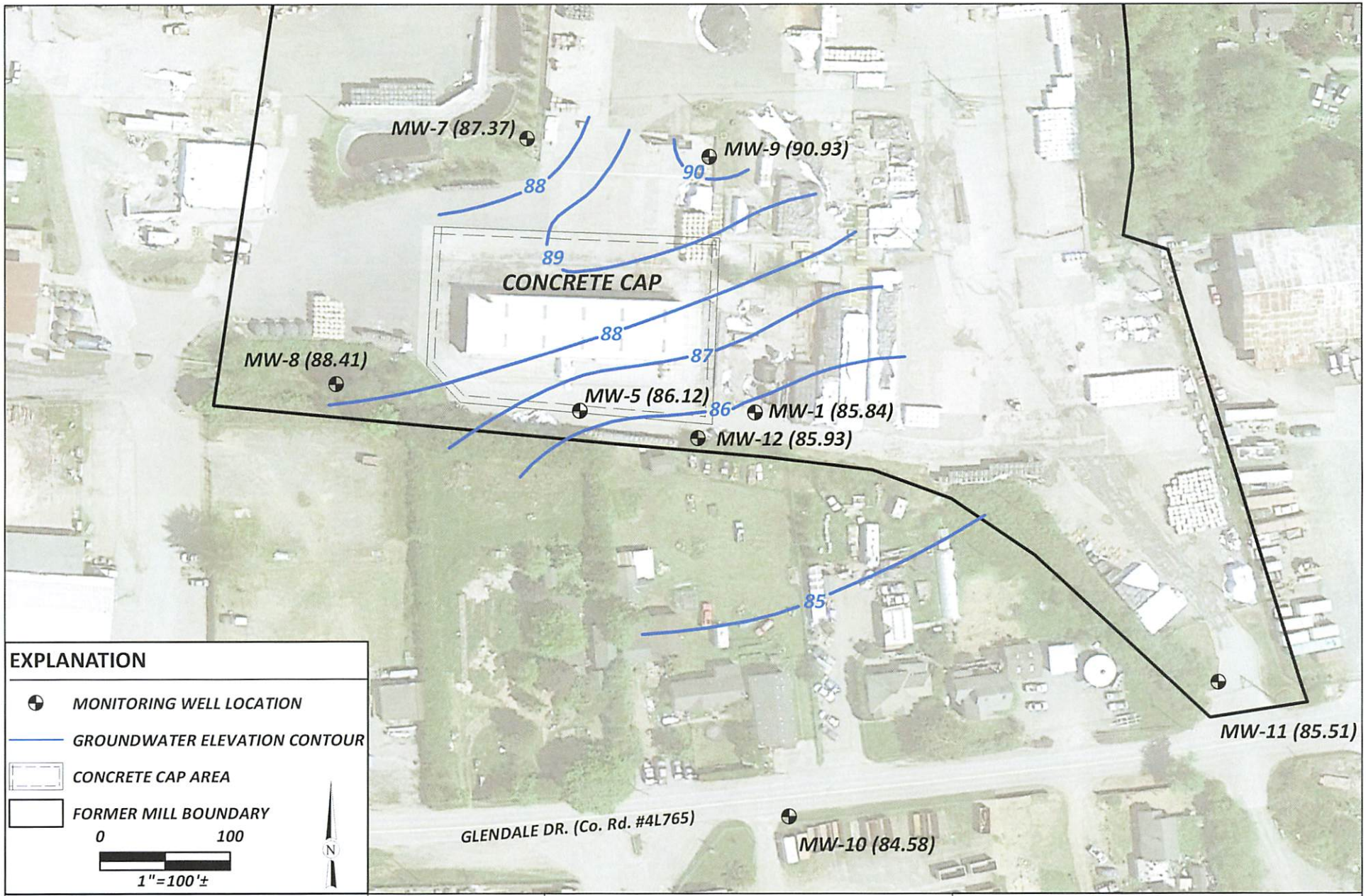

Image Source:
Google Earth, 2019

Former McNamara & Peepe Lumber Mill
Groundwater Monitoring
1619 Glendale Drive, Arcata, California

Groundwater Elevation Contours
March 5, 2021
SHN 020189.030

June 2021 | GW_Fig3_GWCs | Figure 3

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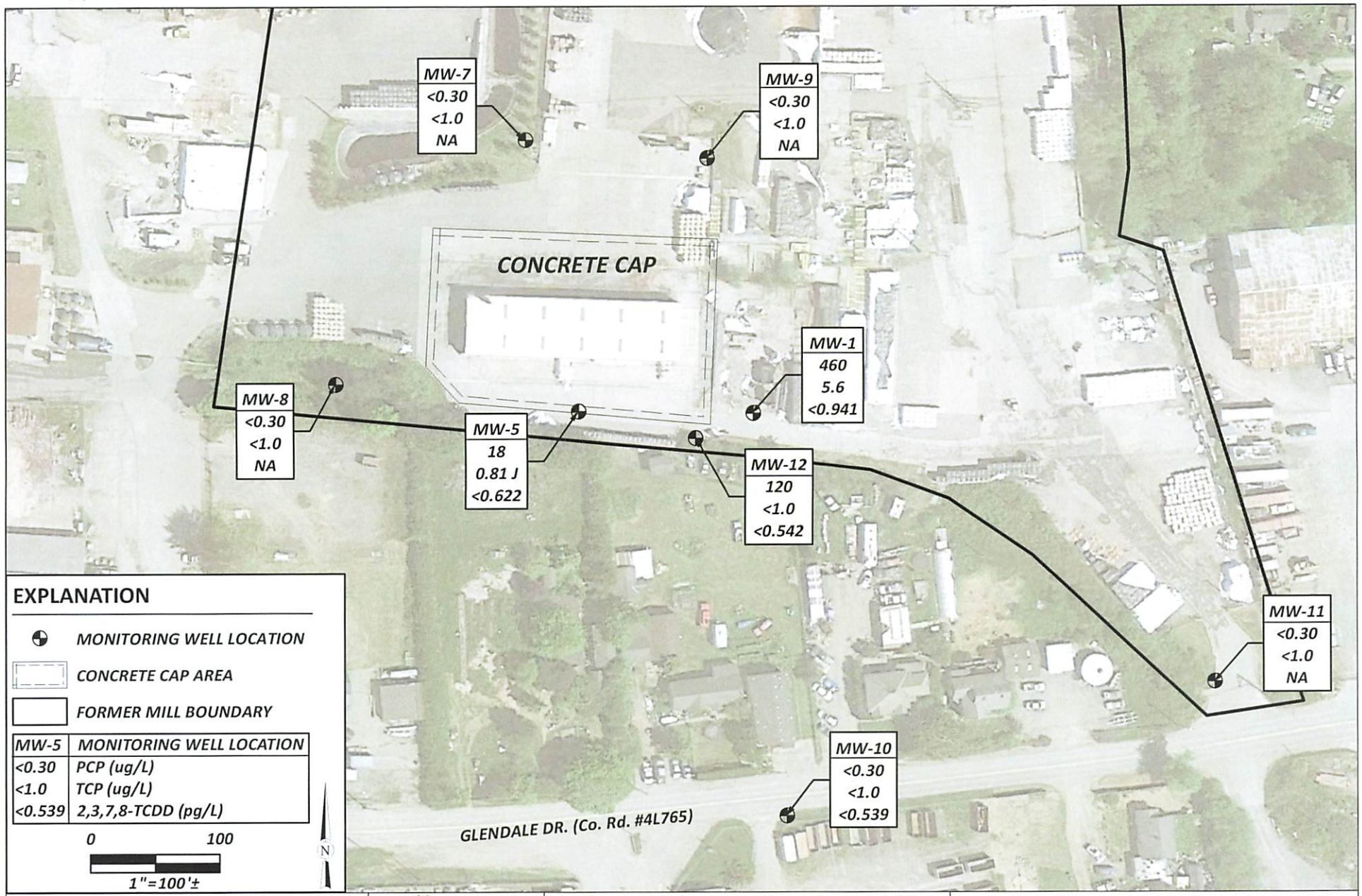

Image Source:
Google Earth, 2019

Former McNamara & Peepe Lumber Mill
Groundwater Monitoring
1619 Glendale Drive, Arcata, California

Select Groundwater Concentrations
March 5, 2021
SHN 020189.030

June 2021 | GW_Fig4_Concentrations | Figure 4

Table 3. Field Measured Parameters, March 5, 2021
Former McNamara and Peepe Lumber Mill, Arcata, California

Sample Location	DCO_2[a] (mg/L)[b]	DO[a] (mg/L)	ORP[a] (mV)[c]	EC[a] (umhos/cm)[d]	pH[a] (standard units)	Turbidity (NTU)[e]
MW-1	115	0.23	217	389.8	5.92	1.76
MW-5	175	0.42	222	276.7	5.24	0.32
MW-7	55	1.81	230	102.9	5.33	0.38
MW-8	225	0.19	-60	1,008	5.88	4.41
MW-9	150	0.88	217	315.6	5.90	0.13
MW-10	83	0.27	212	95.0	4.89	5.8
MW-11	80	0.74	80	136.6	5.02	2.73
MW-12	115	0.13	227	269.3	5.21	0.72

[a] DCO_2: dissolved carbon dioxide, DO: dissolved oxygen, ORP: oxidation-reduction potential, EC: specific conductance, pH, turbidity, and temperature were measured using portable instrumentation.
[b] mg/L: milligrams per liter
[c] mV: millivolts
[d] umhos/cm: micromhos per centimeter
[e] NTU: Nephelometric turbidity unit

5.0 Summary of Results

The results of the March 5, 2021 groundwater monitoring event at the former McNamarra and Peepe mill are summarized below.

- 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD) was not detected at concentrations above laboratory detection limits in any samples collected during the sampling event.
- Chlorinated Phenols:
  - PCP was detected at concentrations exceeding the state maximum contaminant level (MCL) of 1 ug/L in MW-1, MW-5, and MW-12.
  - The maximum concentration of PCP detected in groundwater was in well MW-1 at a concentration of 460 µg/L.
  - TCP was detected in well MW-1 at a concentration of 5.6 µg/L and in well MW-5 at 0.81 µg/L (estimated concentration below the laboratory reporting limit, but above the method detection limit).
  - Chlorinated phenols were only detected in groundwater from wells directly adjacent to and downgradient from the cap. No chlorinated phenols were identified in wells located further downgradient of the cap (MW-10 and MW-11).

Comparison of current results to historical concentrations shows very little change and levels within historical trends.

6.0 References Cited

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