

Date: July 24, 2023

To: FILE

Through: Bruce Scherzinger, Lead Worker
Peter Donahower, Section Manager

From: Ellen Woods, Project Manager
Western Region

Subject: Idanha Cardlock, LUST #24-21-1203; Staff Memorandum in support of a No Further Action determination

This document presents the basis for the Oregon Department of Environmental Quality's (DEQ's) recommended No Further Action (NFA) determination for the Idanha Cardlock, in Idanha. As discussed in this report, contaminant concentrations in soils are below acceptable risk levels.

The proposed NFA determination meets the requirements of Oregon Administrative Rules Chapter 340, Division 122, Sections 0205 to 0360.

The proposal is based on information documented in the administrative record for this site. A copy of the administrative record index is presented at the end of this report.

1. BACKGROUND

Site location.

The site's location can be described as follows:

- Address: 1477 N Santiam Hwy, Idanha, Marion County, Oregon.
- Latitude 44.6996 N, -122.0704 W
- Linn County map and tax lot 106E17B000200, located in Township 10 South, Range 6 East, Section 17

Site setting.

The site is located approximately 1.5 miles west of Idanha, a rural community, just northwest of North Santiam Highway/OR Highway 22 (Figure 1). The site is approximately 5.84 acres and includes various features: a cardlock fueling facility with a dispenser island in the southwest area of the site, several warehouses immediately north and northwest of the cardlock, two residential mobile homes approximately 300 feet east of the cardlock, and a coffee stand approximately 20 feet south of the cardlock. Undeveloped areas of the site are covered with gravel or grass and are not paved. A water supply well located is located approximately 175 feet northeast and up-gradient of the fueling area and provides water to the site. The fueling operation includes two

10,000-gallon gasoline underground storage tanks (USTs), one 8,00-gallon diesel UST and one 12,000-gallon diesel UST. The site is zoned for industrial land use and is an active cardlock facility. The current features of the site are depicted in Figure 2.

The property immediately west of the site includes a residence and an outbuilding. The property immediately east of the site also includes a residence. The site and surrounding properties are otherwise surrounded by North Santiam Highway to the south/southwest and forest to the north.

Physical setting.

The site is in the North Santiam River Valley and is surrounded by steep forested terrain to the north and the North Santiam River approximately 330 feet to the southwest. Subsurface geological characteristics in the valley consist of fluvial and glacial deposits, consisting of boulders, gravel and sand. Borings logs from the site indicate a shallow sandy gravel layer with cobbles underlain by a silty sand, sandy silt, gravel and cobbles, with bedrock encountered at approximately 11 feet below ground surface (bgs).

Shallow groundwater at the site is estimated to flow to the southwest towards the North Santiam River. The well log for the onsite well indicates a static water level of approximately 14 feet bgs. Groundwater was not encountered during soil sampling activities.

Site history.

The current cardlock fueling facility was developed on the site in the early 1980s. Several outbuildings now are used as warehouses for a trucking business and were added to the property by 1999 and the most recent outbuilding was constructed northeast of the cardlock facility in 2019. The two residential mobile homes were added to the site by 1990.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.

The site is in a rural area and is zoned for industrial use (IND). The surrounding properties to the west, east and south are zoned for commercial and recreational use (COM-REC). Residences are allowed on these properties in approved cases. The property north of the site is zoned for timber conservation (TC) with no development. It is expected that land use at the site and surrounding properties will remain the same in the future.

Groundwater use.

Current and reasonably likely future beneficial uses of groundwater at the site and in the vicinity include drinking water wells for domestic and industrial purposes. The City of Idanha supplies water to Santiam Flats Campground, which is located approximately 0.25 miles west of the site, although city water connections are not available for the site and adjacent properties. A search of Oregon Water Resources Department well logs identified three water supply wells within 0.5 miles of the site, including the domestic well on the subject property. The well provides water to the residences and the coffee stand at the site and to the residence on the property immediately west of the site. The well was completed in 1975 to a total depth of 44 feet bgs and is not screened or perforated; it is open-ended on the bottom.

A domestic well was identified approximately 650 feet northeast and upgradient of the site. The well was installed to a depth of 69 feet bgs in 1964. Another well used for domestic and industrial purposes was identified approximately 750 feet southeast and upgradient of the site. This well was installed to 106 feet bgs in 1954. The location of both wells is depicted in Figure 3. No other wells were identified downgradient or within 0.5 miles of the site.

Surface water use.

There are no surface water bodies at the site. The nearest surface water body is the North Santiam River, located approximately 330 feet southwest of the site. The river flows to the northwest and into the Detroit Lake reservoir.

3. INVESTIGATION AND CLEANUP WORK

Four soil borings were advanced at the site in September 2021 as a part of a due diligence Phase II Environmental Assessment. The borings were advanced in the vicinity of the USTs and dispenser island of the cardlock facility (Figure 2). Field screening indicated shallow soil petroleum contamination in the boring (GP3) just west of the dispenser island. Field screening did not indicate contamination at the other boring locations down to depths ranging from 11 feet to 15 feet bgs, where the drilling rig was met with refusal. Groundwater was not encountered in any of the borings.

All soil samples were analyzed for:

- Total petroleum hydrocarbons (TPH) as gasoline, diesel and oil
- Volatile organic compounds
- Polycyclic aromatic hydrocarbons (PAHS)

Laboratory results for the shallow soil sample collected at GP3 showed detections of oil-range TPH and PAHs. No other contaminants were detected at GP3. Contamination was not detected in the samples collected from the other borings locations. The contamination at GP3 is suspected to be from historic surface spill(s). The results were reported to DEQ and LUST file #24-21-1203 was opened.

No additional investigation or cleanup work was conducted at the site.

Nature and extent of contamination.

The contaminants of interest in shallow soil include oil-range TPH and PAHs. Soil contamination was observed at a depth of approximately 2.5 feet bgs just west of the dispenser island. The horizontal extent of contamination is estimated to cover a limited area west of the dispenser island (Figure 2).

Groundwater was not encountered at the site and evidence of subsurface soil contamination deeper than 2.5 feet bgs was not observed. This suggests that groundwater at the site has not been impacted by the residual contamination in soil.

4. RISK EVALUATION

Conceptual site model.

Evaluating human exposure to residual chemical contamination requires an assessment of the type and extent of that exposure. This is based on current and reasonably likely future site use. DEQ publishes risk-based concentrations (RBCs) for contaminants commonly encountered, for different types of exposure scenarios. These RBCs are conservative estimates of protective levels of contaminants in soil, groundwater and air. Table 1 shows potential exposure pathways and receptors for this site. Based on this, applicable RBCs are identified and used for risk screening. It should be noted that although the site is zoned for industrial purposes, there are residences at the site and the adjacent properties. Thus, the residential exposure scenarios were used for risk screening at this site.

Pathways by which soil contamination at the site could reach human receptors include:

- Soil ingestion, dermal contact, and inhalation for residential and occupational receptors
- Soil ingestion, dermal contact, and inhalation for construction and excavation worker receptors
- Volatilization to outdoor air for residential and occupational receptors
- Vapor intrusion into buildings for residential and occupational receptors
- Leaching to groundwater for residential and occupational receptors

Groundwater pathways are not considered in the conceptual site model. Groundwater was not encountered at the site and evidence of subsurface soil contamination deeper than 2.5 feet bgs was not observed. This suggests that groundwater at the site has not been impacted by the residual contamination in soil. Moreover, all of the domestic and industrial use wells identified within 0.5 miles of the site, including the well that supplies the site and west-adjacent property, are located upgradient of the cardlock fueling area and were completed to depths ranging from 44 feet to 106 feet bgs.

Contaminant concentrations.

A concentration of 1,780 milligrams per kilogram (mg/Kg) oil was observed at GP3. Relatively low concentrations of chrysene, fluoranthene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, phenanthrene and pyrene were also detected:

Contaminant	Concentration
TPH	
Oil	1,780 mg/Kg
PAHs	
Chrysene	0.0138 mg/Kg
Fluoranthene	0.0186 mg/Kg
1-Methlynaphthalene	0.0197 mg/Kg
2-Methlynaphthalene	0.0345 mg/Kg
Naphthalene	0.0248 mg/Kg
Phenanthrene	0.0481 mg/Kg
Pyrene	0.0194 mg/Kg

Human health risk.

The concentration of oil TPH observed in shallow soil exceeds the RBC for soil ingestion, dermal contact, and inhalation by residential receptors. Residential exposure to the contamination is unlikely, however, given that the contamination was observed in the area of the site used as the cardlock facility, where residents do not occupy or otherwise use the site. Moreover, the nearest residence is located approximately 290 feet west of the cardlock fueling area. The impacted area of the site is also covered by approximately 1 foot of gravel, which protects any potential receptors from encountering the contamination.

The concentration of oil TPH does not exceed any other applicable RBCs for the site, including the most critical pathway, soil leaching to groundwater. The onsite domestic supply well is located approximately 175 feet northwest and upgradient of the contaminated area, further supporting that the contamination has not and is not reasonably likely to impact water quality at the well. Additionally, all other wells identified within 0.5 miles of the site are located over 600 feet away and upgradient from the contamination.

Contamination was not observed in deeper soils onsite and there is no unacceptable risk to current and future construction or excavation workers at the site.

Ecological risk.

There are no surface water bodies at the site and shallow groundwater was not encountered at the site during the assessment. The potential for contaminated groundwater to impact offsite surface water bodies is low, due to the depth of the observed contamination. Additionally, there is no terrestrial habitat at the site and there is not expected to be in the future. Contaminated soils are limited to the site and do not extend onto the forested terrain north of the site. Thus, there is no unacceptable ecological risk at the site.

5. RECOMMENDATION

Based on sample results for soil and the nature and extent of contamination, unacceptable risk levels are not exceeded, and a No Further Action determination is recommended for this site.

The No Further Action determination should be recorded in DEQ's underground and leaking underground storage tank databases (Facility No. 3088, LUST No. 24-21-1203).

6. ADMINISTRATIVE RECORD

Risk-Based Closure Report, HydroCon, LLC, February 24, 2023.

Phase II Assessments Report – 14 Marc Nelson Oil Products Facilities in Western Oregon, SLR International Corporation, November 2021.

7. ATTACHMENTS

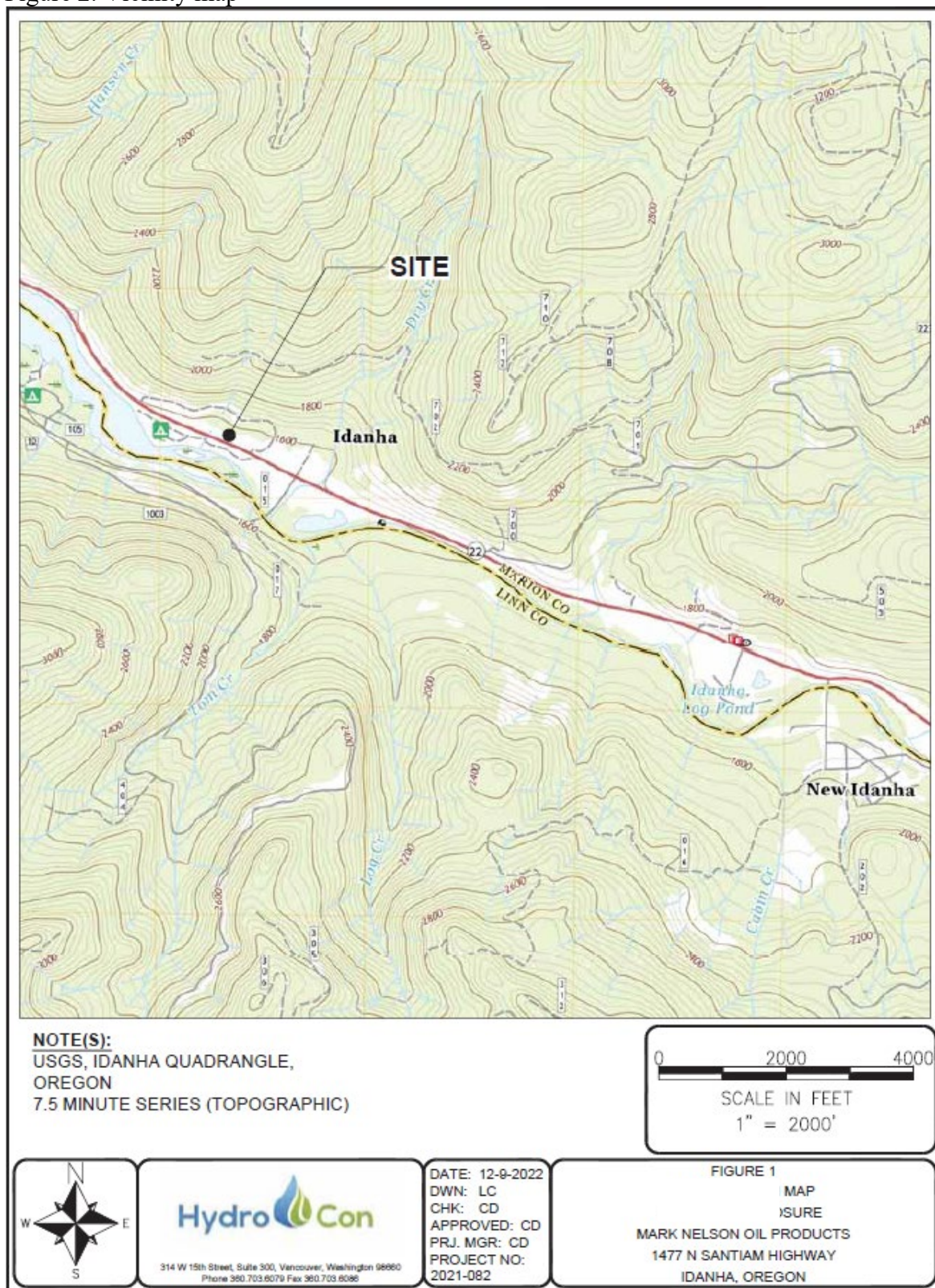
Figure 1. Vicinity map

Figure 1. Site map with estimated extent of contamination (locality of the facility)

Figure 3. Surrounding properties and well locations

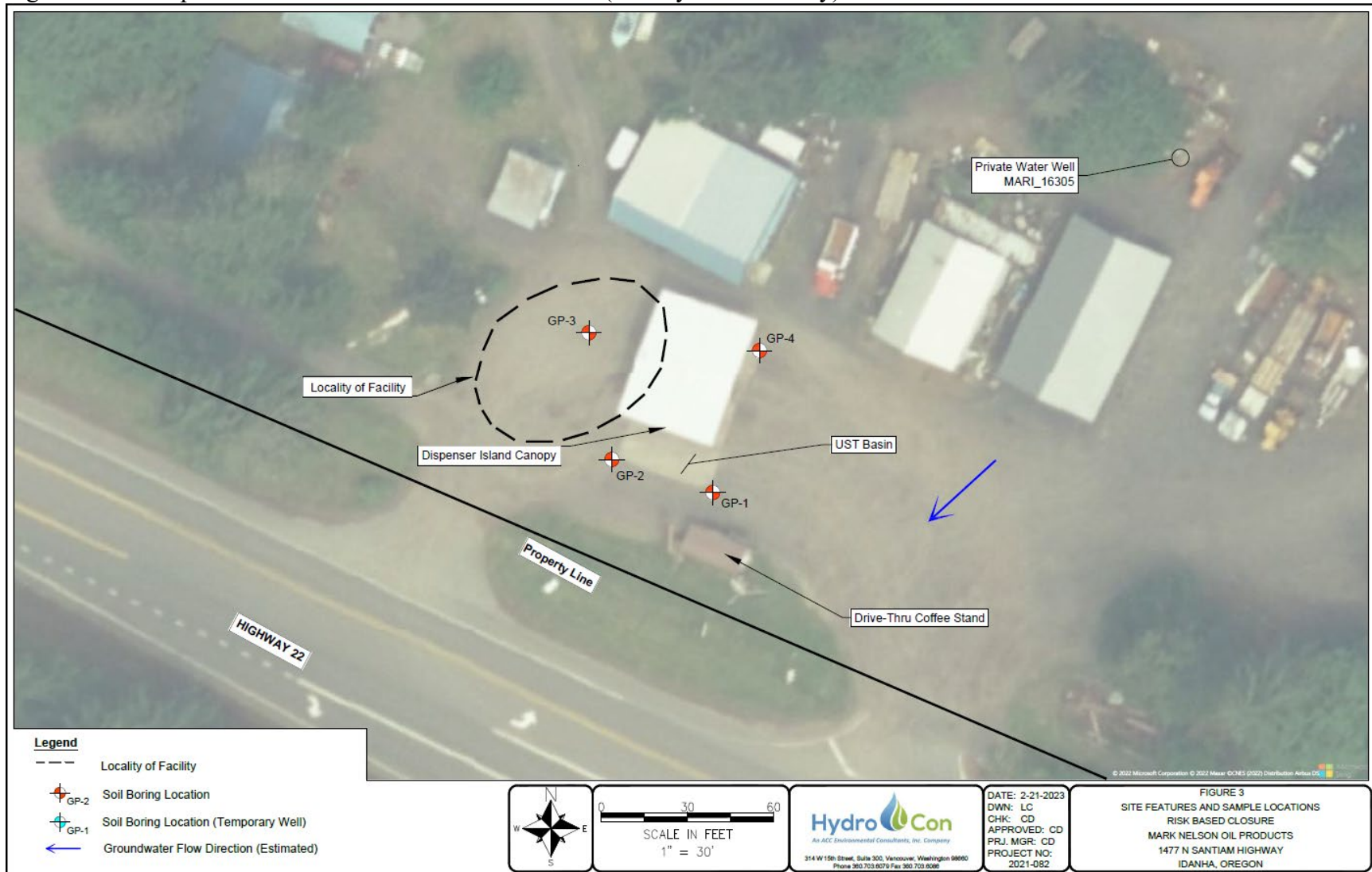
Table 1. Identification of applicable RBCs, based on pertinent pathways and receptors

Figure 2. Vicinity map



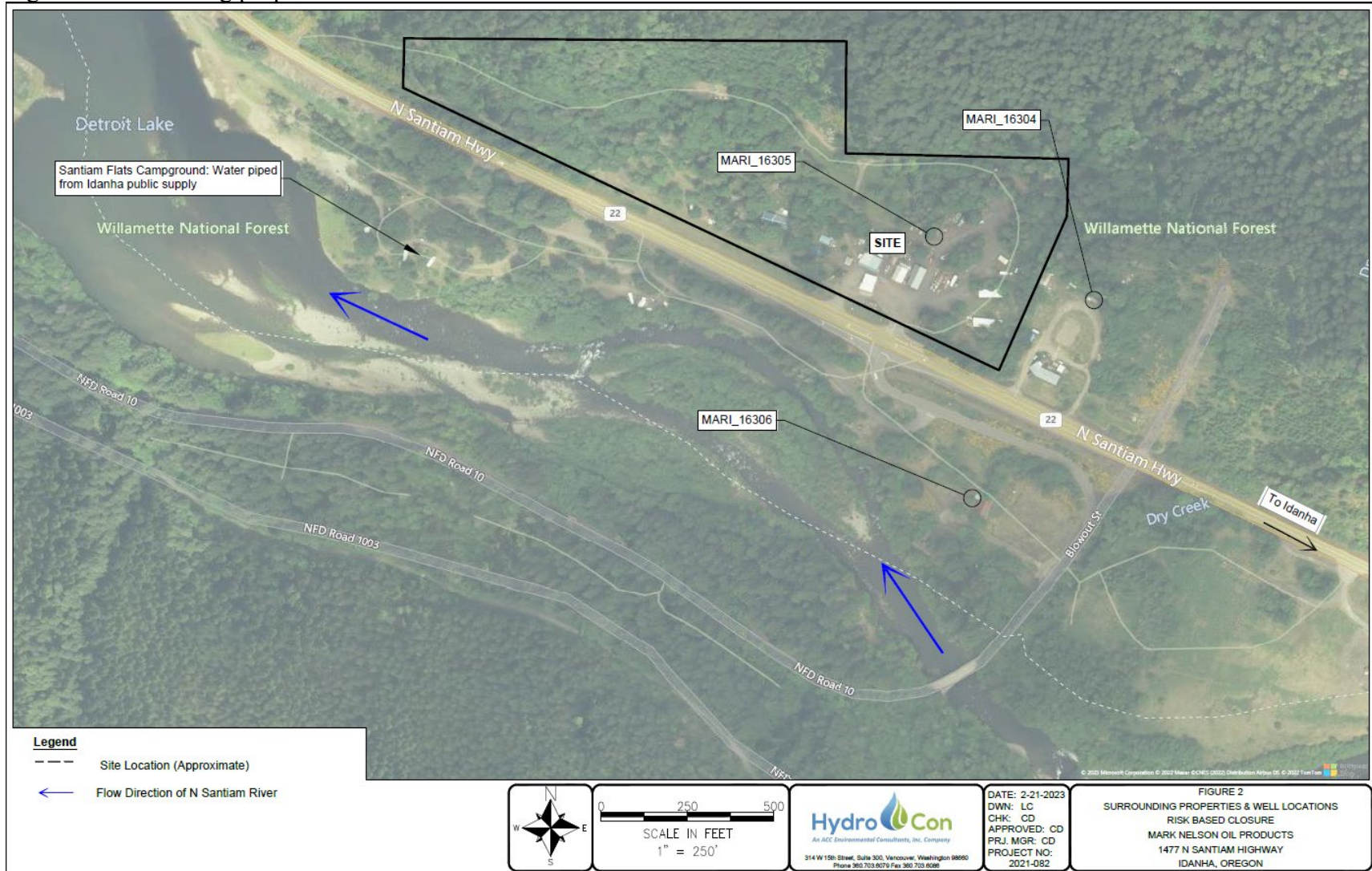
From Risk-Based Closure Report, HydroCon, LLC, February, 24 2023

Figure 3. Site map with estimated extent of contamination (locality of the facility)



From *Risk-Based Closure Report*, HydroCon, LLC, February 24, 2023.

Figure 3. Surrounding properties and well locations



From *Risk-Based Closure Report*, HydroCon, LLC, February 24, 2023.

Table 1. Identification of applicable RBCs, based on pertinent pathways and receptors

	Pathway	Receptor	Is Pathway Complete?	Is RBC Exceeded?	Comments
Soil	Ingestion, Dermal Contact and Inhalation	Residential	Yes	Yes	See note 1.
		Urban Residential	No	N/A	See note 2.
		Occupational	Yes	No	
		Construction Worker	Yes	No	
		Excavation Worker	Yes	No	
	Volatilization to Outdoor Air	Residential	Yes	No	
		Urban Residential	No	N/A	
		Occupational	Yes	No	
	Vapor Intrusion Into Buildings	Residential	Yes	No	
		Urban Residential	No	N/A	
		Occupational	Yes	No	
	Leaching to Groundwater	Residential	Yes	No	
		Urban Residential	No	N/A	
		Occupational	Yes	No	
Groundwater	Ingestion & Inhalation From Tap Water	Residential	No	N/A	See note 3.
		Urban Residential	No	N/A	
		Occupational	No	N/A	
	Volatilization to Outdoor Air	Residential	No	N/A	See note 4.
		Urban Residential	No	N/A	
		Occupational	No	N/A	
	Vapor Intrusion Into Buildings	Residential	No	N/A	
		Urban Residential	No	N/A	
		Occupational	No	N/A	
	Groundwater in Excavation	Construction/Excavation Worker	No	N/A	

Notes:

1. The RBC was exceeded but the contamination is limited to an area of the site where residents do not occupy or otherwise use the site.
2. The more conservative residential receptor scenario was selected.
3. All wells identified within 0.5 miles of the site are upgradient from the contamination.
4. Groundwater was not encountered at the site and evidence of subsurface soil contamination deeper than 2.5 feet bgs was not observed. This suggests that groundwater at the site has not been impacted by the residual contamination in soil.
5. Complete exposure pathways with an exceedance of an RBC are highlighted.