SITE HAZARD ASSESSMENT
WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Transmart Petroleum Avon Bulk Plant
16915 State Route 20
Mount Vernon, Skagit County, WA 98273

SE ¼, SE ¼, Section 2, Township 34 North, Range 03 East

Parcels:	P37183
Latitude:	48.45794
Longitude:	-122.38085
FSID #:	31426711
Cleanup Site ID:	5854

Site scored/ranked for the February 2014 update of the Site Register by Corrina Marote, Skagit County Public Health Department on October 14, 2013.

SITE DESCRIPTION:

The Transmart Petroleum Avon Bulk Plant site (Figures 1 and 2) was historically a bulk fueling plant located west of Burlington, Washington in Skagit County. The 0.76-acre property is approximately 5000 feet northwest of the Skagit River. The zoning designation for that area is Rural Business and Natural Resource Industrial.

Adjacent properties include Nutrena Feed Division of Cargill, Inc. (Figures 9-11), BNSF Railway Company (Figures 4, 5), and Skagit Farmers Supply (west of site, across Avon Allen Road). Petrocard Systems, Inc. is approximately 400' northwest of the site; however, there are no fueling operations at this location (Figure 19). The property is used primarily for truck parking. Much of the surrounding land is under agricultural production. A high-density housing development is approximately 3000 feet northwest of the site.

The local public utility district provides drinking water to most residences in the area. However, within two miles of the site, the Department of Ecology well log database reports 45 drinking water wells, which serve approximately 135 people. Within 2 miles of the site are 1746 irrigation acres. Wells, water systems and irrigation acres on the other side of the Skagit River, which is considered a hydrological barrier, were not included in this assessment.

The City of Anacortes public water system (PWSID 2200) is situated on the Skagit River within 2 miles of the site (Figure 1). The water system serves approximately 15,734 people. However, since the water system draws from a surface water source and groundwater flow is modeled to flow west, contaminated groundwater is not predicted to reach the water treatment plant.

The site is currently operating as a medical marijuana dispensary (Figure 6).

SITE BACKGROUND:

Historical events and operations:

1924-1971	Bulk petroleum storage
1971	Facility upgrade
1999	Underground storage tank upgrade
2009	Pacific Pride (appeared to be closed)
Winter 2012/2013 to present	Medical marijuana dispensary

SITE CONTAMINATION:

In 1991 Environmental Science & Engineering, Inc. (ESE) performed a Phase I site assessment for Northwest Fuel Co. /Martin Oil to meet the requirements of an insurer. Five groundwater monitoring wells were installed as part of the site assessment. Contamination exceeding the Model Toxics Control Act (MTCA) from petroleum products was found in groundwater from three of the five monitoring wells. The tanks and piping passed underground storage tank systems tightness tests. ESE found no record of spills on site; however, Olympic Pipeline operates a pumping station approximately 1500' west of the site. In 1983 and 1988 large diesel spills (1600 to 4000 barrels) originating from Olympic Pipeline were reported.

In 1999 Pinner Engineering, Inc. (PEI) oversaw the removal of all but five underground storage tanks; the five tanks were to remain in service (Figure 3). Groundwater and soil samples taken from the excavation areas exceeded MTCA for total petroleum hydrocarbons in the gasoline range (TPH-G).

PAST REMEDIATION ACTIVITIES:

In 2003 Transmart Petroleum LLC (Transmart) submitted to Ecology a report that included monitoring well sample results from 1997, 2001, and 2003. Samples from all five monitoring wells (Figure 3) exceeded MTCA Cleanup levels for TPH-G and benzene. Additionally, MTCA Cleanup levels for TPH-diesel (TPH-D), ethyl benzene and xylenes were exceeded in samples from two monitoring wells. Methyl tertiary-butyl ether (MTBE) concentrations were below the method detection limit; however, the detection limit was above the MTCA cleanup level. Since historical contamination remained, Transmart stated that further remedial action was planned and that Whatcom Environmental Services (WES) would be the consultant on the project.

CURRENT SITE CONDITIONS:

I visited the site on Friday, September 20, 2013 at approximately 8:15 a.m. It was partly sunny and 55 degrees Fahrenheit. The site is entirely paved up to the edge of the railroad right-of-way. A storm drain on the east end had a shut-off valve in the closed position (Figure 13). Recent rain caused pooling over the storm drain. The pooled water did not have any rainbows that indicate petroleum contamination. In general the site did not have any obvious surface contamination, aside from incidental leaks from parked vehicles.

I spoke to Harold Cashman from WES in September. He stated that remediation work had not been done at that location. The owner stated that that tanks are empty, cathodic protection is operable, and the spill buckets were upgraded.

SPECIAL CONSIDERATIONS:
Checked boxes indicate routes applicable for WARM scoring

☐ **Surface Water**

☐ **Air**

☒ **Groundwater**

Groundwater contamination from TPH-G, TPH-D, benzene, ethyl benzene, xylenes, and possibly MTBE is above MTCA Method A Cleanup levels is documented from samples taken in 2003.

ROUTE SCORES:

Surface Water/Human Health:	NS	Surface Water/Environmental:	NS
Air/Human Health:	NS	Air/Environmental:	NS
Groundwater/Human Health:	60		

OVERALL RANK: 3

SOURCES USED IN SCORING

1. September 2013, Skagit County Health Department, Transmart Petroleum Avon Bulk files and field notes.
2. February 26, 1991, Tanknology Corporation International, Certificate of Tightness.
3. March 11, 1991, Environmental Science & Engineering, Inc. Phase I Site Assessment.
4. February 2, 1999, Pinner Engineering, Inc., UST Site Assessment.
5. June 6, 2003, Transmart Petroleum, Letter to Ecology regarding Independent Remedial Action.
6. April 1992, Washington Department of Ecology, WARM Scoring Manual.
7. January 1992, Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring.
8. April 1966, National Weather Service, Washington Climate Data.
9. 2012, Washington Department of Ecology, Water Rights Explorer.
10. Washington Department of Ecology, Well Logs.
11. Washington Department of Health Public Water Supply Data (SENTRY).
12. 2012, Skagit County Mapping, Skagit Explorer, Version 10.0.1750.
13. http://pubs.usgs.gov/sir/2009/5208/lof.html

WORKSHEET 2
Route Documentation

1. SURFACE WATER ROUTE

a. List those substances to be considered for scoring:

Not applicable

b. Explain basis for choice of substance(s) to be used in scoring:

c. List those management units to be considered for scoring:

d. Explain basis for choice of unit to be used in scoring:

2. AIR ROUTE

a. List those substances to be considered for scoring:

Not applicable

b. Explain basis for choice of substance(s) to be used in scoring:

c. List those management units to be considered for scoring:

d. Explain basis for choice of unit to be used in scoring:

3. **GROUNDWATER ROUTE**

a. List those substances to be considered for scoring: Source: 1, 2, 3, 4, 5

Benzene, ethyl benzene, and total xylenes. TPH-D (naphthalene) also exceeded MTCA Method A Cleanup levels; however, toxicity is at the maximum value with the contaminants listed.

b. Explain basis for choice of substance(s) to be used in scoring:
Documented groundwater contamination with benzene, ethyl benzene, total xylenes, and naphthalene exceeding MTCA Cleanup Levels.

c. List those management units to be considered for scoring: Source: 1, 2, 3, 4, 5

Contaminated groundwater

d. Explain basis for choice of unit to be used in scoring:

Documented ground water contamination with benzene, ethyl benzene, total xylenes, and naphthalene exceeding MTCA Cleanup Levels.

WORKSHEET 6

Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity										
	Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Benzene	5	8	3306, LD50, rat	3	-	-	A	0.029	5
2	Ethyl benzene	700	4	3500, LD50, rat	3	0.1	1	--	--	ND
3	Xylenes	10000	2	50, LDLo, hmn	10	2	1	--	--	ND

* *Potency Factor*

Source: 1,2, 3,4, 5

Highest Value: 10
(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 12
(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)	
Cations/Anions [Coefficient of Aqueous Migration (K)] OR	**Solubility (mg/L)**
1= value=	1= 1800 value= 3
	2=150 value = 2
	3= 200 value = 2

Source: 1,2,3,4, 5

Value: 3
(Max = 3)

1.3 Substance Quantity (volume):	
Explain basis: contamination found in samples from monitoring wells in area of 12 refillable tanks with a total capacity of 81,000 gallons of petroleum products	Source: 1,2,3,4,5, 6 **Value: 6** (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment (explain basis):** Contaminated groundwater from leaking underground storage tanks.	1, 2, 3, 4,5, 6	**10** (Max = 10)
2.2	**Net precipitation:** (5.6+6.4+5.4+4.2+4.7+3.3)-(.9+.5+.4+.6+1.2+2.1) = 23.9”	8	**3** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** gravelly, cobbled sand	3	**4** (Max = 4)
2.4	**Vertical depth to groundwater:** Excavation on site <25’depth to ground water	3	**8** (Max = 8)

3.0 TARGETS

		Source	Value
3.1	**Groundwater usage:** private supply, no alternate sources available	1, 10, 11, 12	**5** (Max = 10)
3.2	**Distance to nearest drinking water well:** >600 to 1300 feet	1, 10, 11, 12	**4** (Max = 5)
3.3	**Population served within 2 miles: √ pop.** = √135=12	1, 10, 11, 12, 13	**12** (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles : (0.75)*√# acres =** 0.75 * √1746 = 31.34	1, 10, 11, 12	**33** (Max = 50)

4.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater: Contamination above MTCA Method A Clean Up Level found in soil.	1, 2, 3, 4, 5, 6	**5** (Max = 5)

Ground Water Route – Human Health Pathway

$$GW_H = (SUB_{GH} \bullet 40/208) \bullet [(MIG_G \bullet 25/17) + REL_G + (TAR_{GH} \bullet 30/165)] / 24$$

where,

GW_H =	Pathway Score for Ground Water-Human Health
SUB_{GH} =	(Human Toxicity + Mobility + 3) • (Containment + 1) + Substance Quantity
MIG_G =	Depth to Aquifer + Net Precipitation + Hydraulic Conductivity
REL_G =	Release to the Ground Water
TAR_{GH} =	Aquifer Use + Well Distance + Population Served + Area Irrigated

SUB_{GH} = 204, MIG_G = 15, REL_G = 5, TAR_{GH} = 54 **SCORE = 60.3**

QUINTILE (SEPT 2013) = 5

HUMAN HEALTH PRIORITY = $(H^2 + 2M + L)/8$
= $5^2/8$
= 3.12
= **4**

FINAL MATRIX RATING = 2

Transmart PetroleumPhoto Album

Avon Bulk Plant
16915 State Route 20
Mount Vernon, WA
FSID 31426711

by Corrina L. Marote

Figure 1

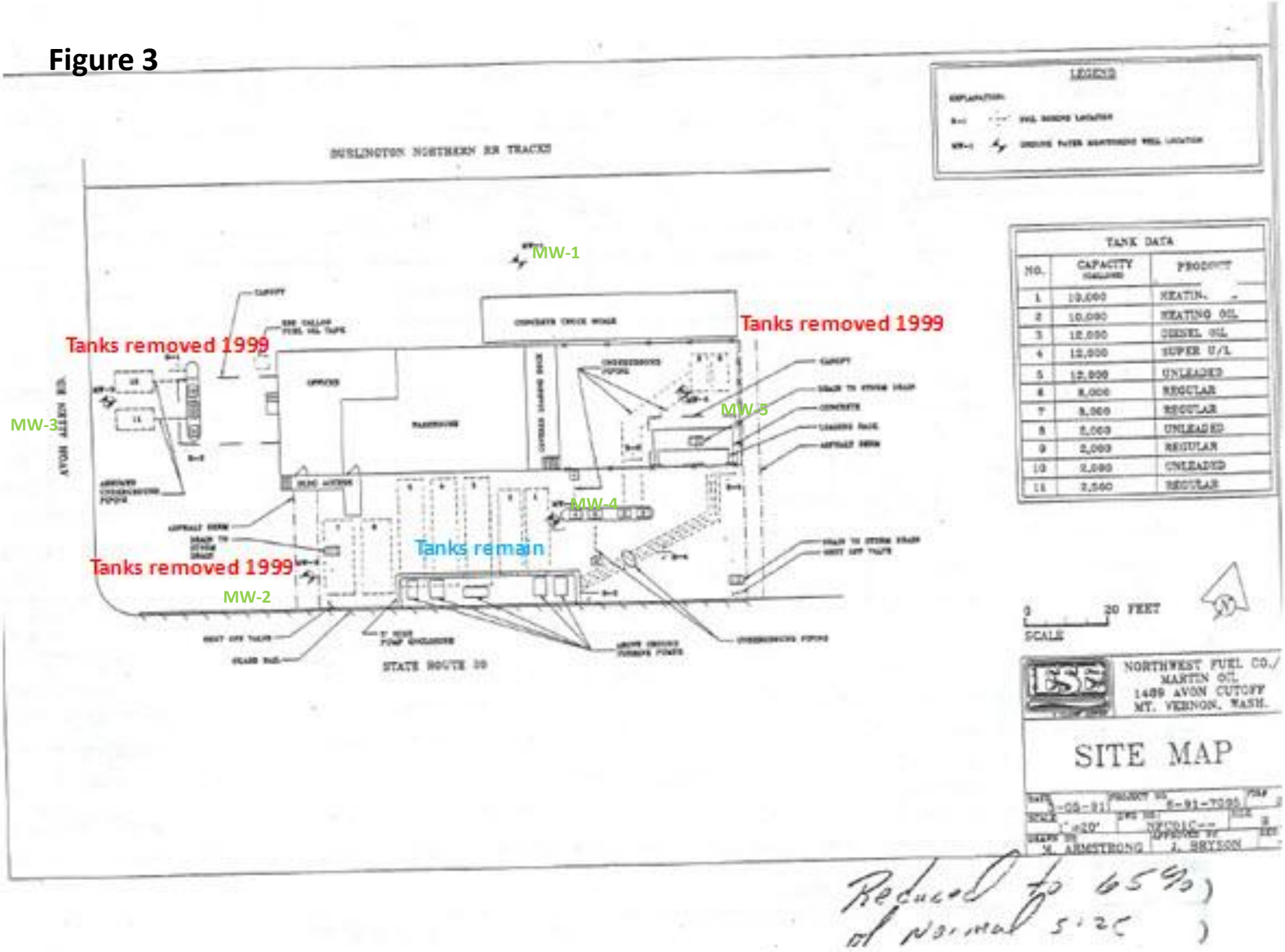

28-35-3
27-35-3
26-35-3
25-35-3
30-35-4
29-35-4
33-35-3
35-35-3
36-35-3
32-35-4
4-34-3
3-34-3
2-34-3
1-34-3
6-34-4
5-34-4
Site
9-34-3
10-34-3
11-34-3
12-34-3
7-34-4
8-34-4
Anacortes Water Treatment
16-34-3
14-34-3
13-34-3
18-34-4
17-34-4

Figure 2


Pictometry
Map
Auto
N
W
E
S
1 / 14
Skagit Regional Airport
Burlington
Mount Vernon
POWERED BY
Pictometry
© 2000-2013

N

Figure 3



Reduced to 65% of Normal Size

Figure 4

West side of building, looking north; staining from parked cars (tanks removed 1999)

Figure 5

More staining on west side of building

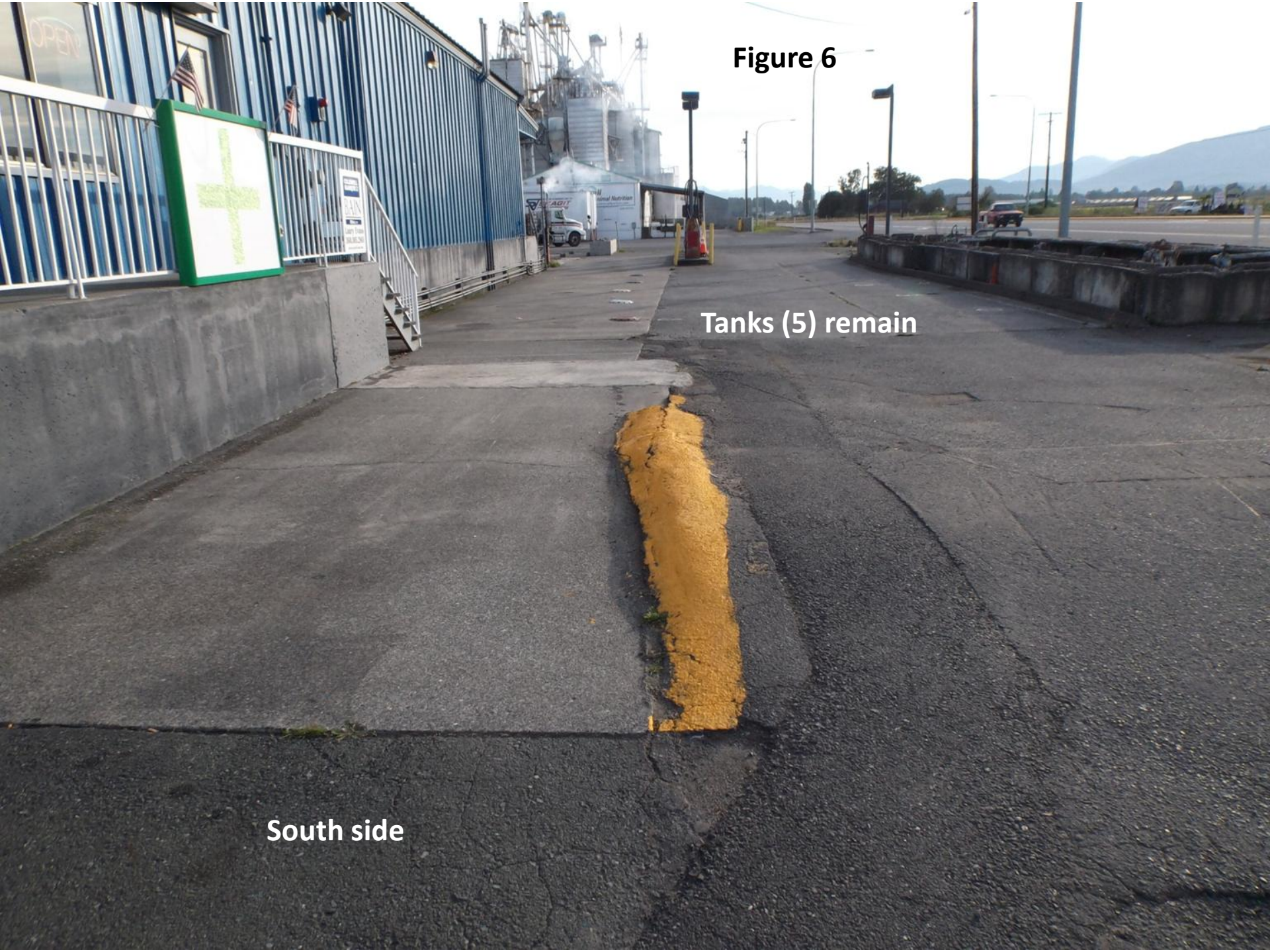


Figure 6
Tanks (5) remain
South side

Figure 7

Turbine pumps


Figure 8
Area where 5 tanks remain

Figure 9

Old dispensers

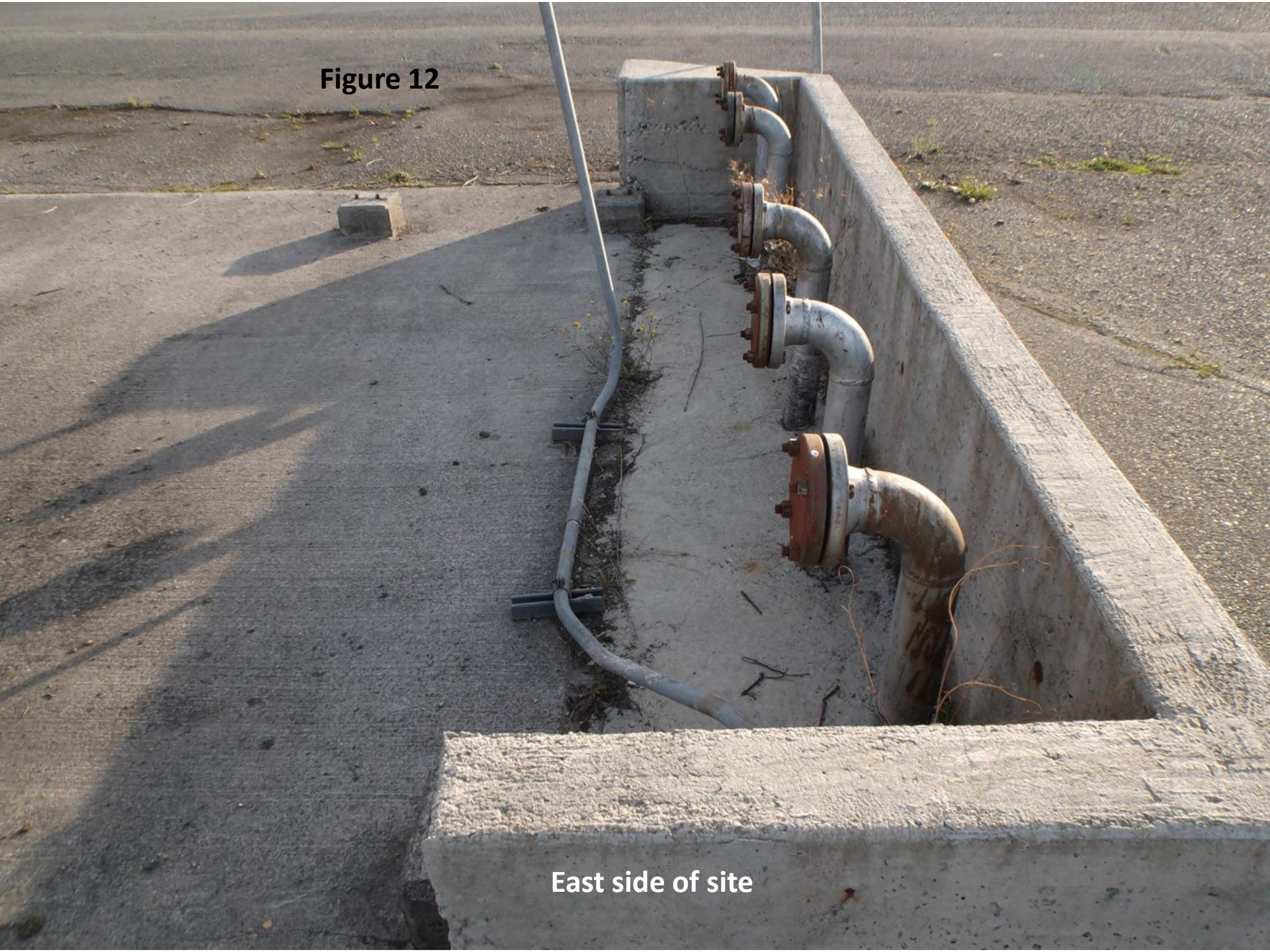
Figure 10

View to the east

Figure 11

Adjacent property to the east

Figure 12



East side of site

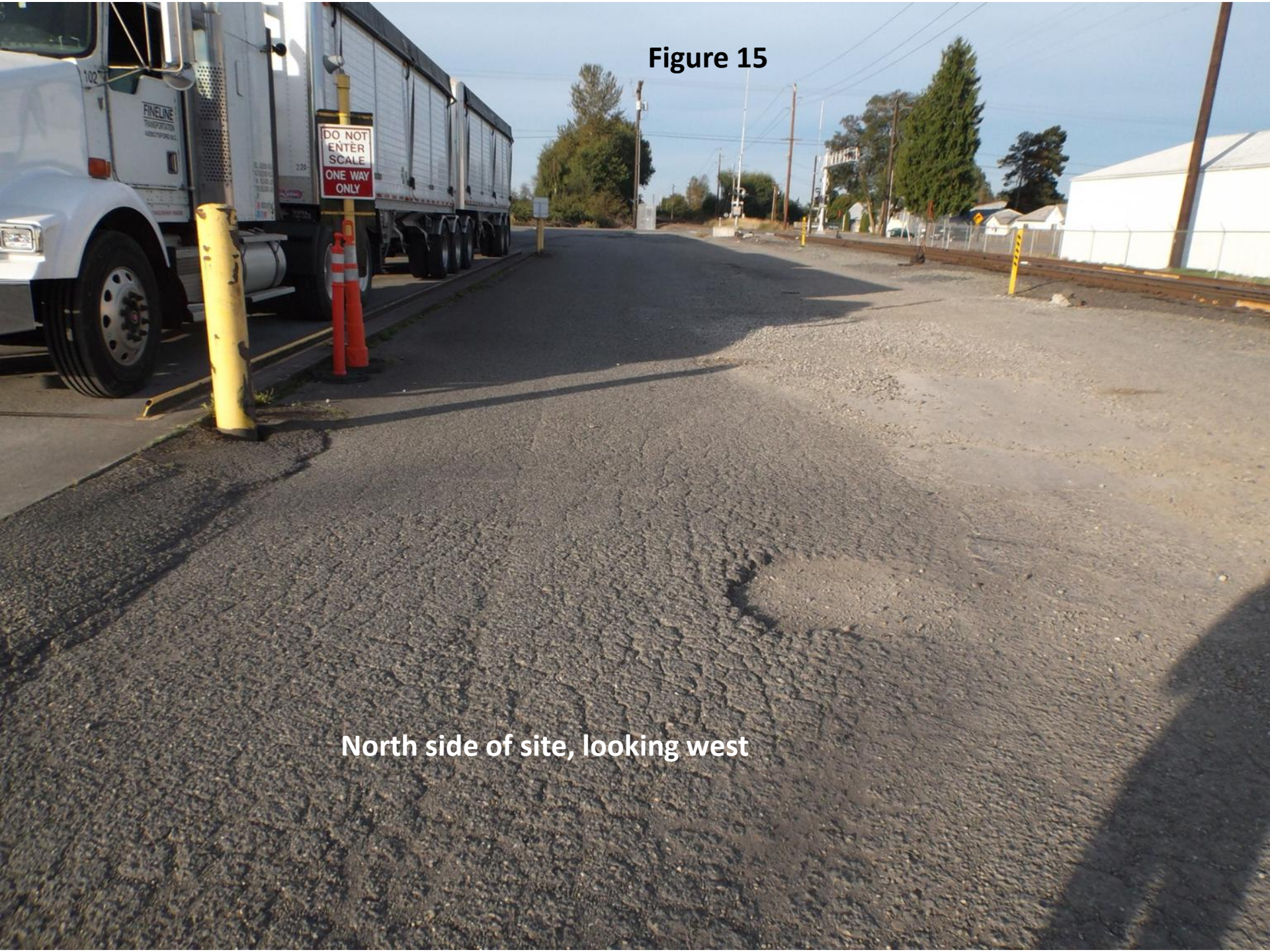
Figure 13

Storm drain with shut-off

Figure 14

Northeast corner of site

Figure 15



North side of site, looking west

Figure 16

Storm drain near railroad, adjacent to the site

Figure 17

Truck scale on north side of building, looking east

Figure 18

West side of site, looking south; location of former heating oil tank

Figure 19: Petrocard Systems, NW of site