PERIODIC REVIEW

Lithia Dodge of Tri-Cities
Facility/Site ID #: 22325

7171 West Canal Drive
Kennewick, WA 99336

Central Regional Office

TOXICS CLEANUP PROGRAM

April 2011

1.0 INTRODUCTION

This document is a review by the Washington State Department of Ecology (Ecology) of post-cleanup site conditions and monitoring data to ensure that human health and the environment are being protected at the Lithia Dodge of Tri-Cities site (Site). Cleanup at this Site was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC).

Cleanup activities at this Site were completed under the Voluntary Cleanup Program (VCP). The cleanup actions resulted in concentrations of total petroleum hydrocarbons (TPH) in soil exceeding MTCA Method A cleanup levels remaining at the Site. The MTCA Method A cleanup levels for soil are established under WAC 173-340-740(2). WAC 173-340-420 (2) requires that Ecology conduct a periodic review of a site every five years under the following conditions:

- Whenever the department conducts a cleanup action
- Whenever the department approves a cleanup action under an order, agreed order or consent decree
- Or, as resources permit, whenever the department issues a no further action opinion,
- And one of the following conditions exists:
    (a) Institutional controls or financial assurance are required as part of the cleanup
    (b) Where the cleanup level is based on a practical quantitation limit
    (c) Where, in the department's judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at the site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional review is necessary to assure long-term protection of human health and the environment.

When evaluating whether human health and the environment are being protected, the factors the department shall consider include [WAC 173-340-420(4)]:

(a) The effectiveness of ongoing or completed cleanup actions;
(b) New scientific information for individual hazardous substances of mixtures present at the Site;
(c) New applicable state and federal laws for hazardous substances present at the Site;
(d) Current and projected site use;
(e) Availability and practicability of higher preference technologies; and
(f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

The department shall publish a notice of all periodic reviews in the Site Register and provide an opportunity for public comment.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site History

The Lithia Dodge Site is located in the City of Kennewick in Benton County, Washington. A vicinity map is available as Appendix 6.1. The Site is approximately 3.5 acres and is located in a commercial district of Kennewick. The Site has been occupied by various car dealerships since at least 1986. A Site plan is available as Appendix 6.2.

2.2 Site Investigations

2.2.1 Phase I

Blue Mountain Shelter, Ltd. (BMS) conducted a Phase I Environmental Site Assessment (ESA) on the property in October 1996 and discovered the following environmental concerns:

1. A 500-gallon underground storage tank (UST) containing used oil buried at the southwest corner of the Service Shop. There was concern about possible subsurface releases of used oil from the tank.

2. An oil/water separator and associated settling tank connected to the used oil tank described in Item 1 above. There was concern about possible releases of contaminants to the subsurface from these tanks.

3. Six underground hydraulic hoists located in the Service Shop. There was concern about possible releases of hydraulic oil to the subsurface from these hoists.

4. A 16' deep dry well located approximately 40' south of the oil/water separator described in Item 2 above. Because drainage from the oil/water separator drained into this dry well, there was concern that contaminants may have found their way into the dry well and subsequently contaminated soil and/or groundwater.

2.2.2 Phase II

BMS conducted a Phase II ESA investigation into the four items listed in Section 2.2.1 above.

2.2.2.1 Used Oil UST

This UST was used to store used oil from the Service Shop and received used oil from a pipe connected to it from inside the Service Shop. Borings were conducted around this UST (borings B19 through B21) and soil samples were collected to determine the presence of any possible releases from the UST. TPH was detected above cleanup levels in samples from borings B19, B20, and B21.

2.2.2.2 Oil/Water Separator and Settling Tank

Borings were conducted around these tanks and soil samples were collected to determine the presence of any possible releases from the tanks. As described in Section 2.2.2.1 above, petroleum was detected above the cleanup levels in samples from both borings. A soil sample from B20 (the sample indicating the highest concentration of petroleum) was also analyzed for solvents, PCBs, and four priority metals. Analyses indicated these compounds were not detected above laboratory method detection limits.

2.2.2.3 Underground Hydraulic Hoists

Attempts were made to bore inside the Service Shop adjacent to these lifts. Because of the nature of the soil (many large rocks, boulders), the equipment used for boring the holes was not heavy enough to reach the required depths. Equipment heavy enough to do the job was too large to use inside the Service Shop, therefore, borings were made outside the building as close to the lifts as possible.

There was no evidence of releases of hydraulic oil in any of the borings; however, petroleum was discovered in borings B19 and B20. This petroleum appeared to be associated with used oil and did not appear to be associated with the hydraulic lifts.

2.2.2.4 Dry Well

This dry well was used to receive waste water from floor drains located in the Service Shop. This waste water drained first to the oil/water separator and then to the dry well. Borings B11 and B22 were conducted around this dry well and soil samples were collected. Laboratory analyses of the samples indicated petroleum above cleanup levels in both borings.

The sample from B11 was also analyzed for solvents, PCBs, and four priority metals. Analyses indicated the presence of two chlorinated solvents, trichloroethene (TCE) and tetrachloroethene (PERC), above cleanup levels. Metals or PCBs were not detected at the laboratory method detection limits.

It was decided to conduct more borings around the perimeter of the pit to determine the horizontal and vertical extent of soil contamination. Soil samples were collected at various depths and terminated at approximately 50 feet bgs. Laboratory analyses of samples indicated petroleum contamination above cleanup levels at location B25 at depths of 38' and 44' below ground surface (bgs). There were no indications of petroleum above cleanup levels at the remaining locations.

2.3 Remedial Activities

2.3.1 UST Decommissioning

The used oil UST was decommissioned on October 31, 1996. During removal of the tank, obvious visual indications of petroleum contamination were observed.

Contaminated soil was removed from under the UST and a soil sample was collected at the bottom of the resulting pit. Laboratory analyses of the sample indicated petroleum below cleanup levels. During removal of the UST, the oil/water separator and associated settling tank were exposed and visual evidence of a petroleum release was observed. Petroleum-contaminated soil removed during the decommissioning of the UST was hauled from the Site for treatment.

2.3.2 Oil/water Separator & Associated Settling Tank Removal

The oil/water separator and settling tank were removed on November 21, 1996. Evidence of petroleum contamination was noticed and four soil samples were collected from the resulting pit at locations 25 through 28. Laboratory analyses of these samples indicated petroleum contamination above cleanup levels at locations 25 and 27.

2.3.3 Dry Well Removal

The dry well was removed on November 22, 1996. Visual evidence of petroleum contamination was observed beginning at a depth of 10' bgs around the perimeter of the dry well. Some contaminated soil was removed from the resulting pit and hauled to a treatment site.

2.3.4 Removal of Contaminated Soil

It was decided by the property owner to remediate all contaminated soil by removing it and treating it using passive remediation at a separate treatment site. Removal activities were conducted using a backhoe and dump trucks from November 22, 1996 to December 6, 1996. All clean overburden soil (approximately 4,000 cubic yards) was stockpiled on Site for later backfilling of the pit, and all contaminated soil (approximately 2,000 cubic yards) was hauled to the treatment site. Further soil sampling was conducted in the resulting pit to attempt to determine the vertical extent of petroleum contamination. A soil sample was collected from each of five locations (locations 31 through 35) within the pit ranging in depth from 32' to 43 bgs. All the samples were analyzed for petroleum, samples from locations 31, 32, and 35 were additionally analyzed for solvents, and the sample from location 35 was additionally analyzed for four priority metals. Analyses of samples from all five locations indicated the presence of petroleum above cleanup levels.

It was determined that petroleum contamination has migrated under the existing Service Shop and extended beyond the north wall of the Service Shop. This conclusion was based upon the detection of petroleum above cleanup levels in the soil sample from location B25 on the opposite side of the Service Shop. Prior to initiating in-situ remediation efforts, BMS estimated that 9,600 cubic yards of contaminated soil remained at the Site.

2.3.5 Bioventing

To remediate the remaining contaminated soils, bioventing was proposed to promote natural attenuation. On February 20, 1998, a bioventing system pilot test was completed and the bioventing cleanup process was formally started. The system was scheduled to operate full time

except for a two-hour shutdown every Thursday. This allowed time for oxygen levels to periodically drop to facilitate calculation of the oxygen respiration rate for on-going evaluation of system performance.

The bioventing system operated until 2000. At that point, BMS determined that soil contamination had likely been remediated. This determination was based upon estimations of initial soil contamination volume and concentration, and estimated rates of petroleum degradation. Soil samples were not collected to confirm whether soils had been successfully remediated.

2.4 Ground Water Monitoring

Three ground water monitoring wells were installed at the Site in 1997. Samples were collected from each well for four consecutive quarters and analyzed for TPH and volatile organic compounds (VOCs). Concentrations of TPH or VOCs were not detected during any of the sampling events above MTCA Method A cleanup levels.

2.5 Regulatory Status

In 1999, Ecology issued a conditional no further action (NFA) determination for the Site. The NFA was contingent on the implementation of institutional controls in the form of a restrictive covenant at the Site. A covenant was prepared and signed by the property owner, but it was never recorded.

In 2002, Ecology issued an unconditional NFA for the Site.

3.0 PERIODIC REVIEW

3.1 Effectiveness of completed cleanup actions

Asphalt and building structures continue to serve as a cap for the Site and eliminate the human exposure pathways (ingestion, contact) to potentially contaminated soils that may remain at the Site. Based upon the Site visit conducted on June 17, 2010, the asphalt surface appears acceptable condition. A photo log is available as Appendix 6.4.

Ground water monitoring has demonstrated that the release of TPH has not impacted ground water at the Site.

Soil samples collected during remedial excavation activities indicated that TPH remained in soil at concentrations exceeding MTCA Method A cleanup levels. A bioventing system was installed to aid in-situ remediation of remaining contamination. This system operated for two years. Oxygen concentrations were monitored to estimate degradation of petroleum hydrocarbon contamination. Based on initial estimates of contamination and oxygen concentrations measured during biovent operation, it was determined that contaminated soils had been remediated in 2000.

Conclusions:

It is the conclusion of this review that soils with contamination at concentrations exceeding MTCA Method A cleanup levels may remain at the Site. Generally, these contaminated soils are located below 15 feet bgs, which is the point of compliance for soil cleanup levels based on exposure via direct contact; however, one sample detected TPH at 1900 parts per million (ppm). The determination that soils have been remediated based on oxygen concentrations measured from the Biovent system is not valid without accompanying confirmational soil samples.

The TPH soil concentration of 1900 ppm was evaluated using Ecology's Standard Fuel Composition spreadsheet, which estimates the distribution of petroleum hydrocarbons in weathered gasoline. These values were used to calculate a Method B soil concentration protective of human health through direct soil contact. The measured value of 1900 ppm does not exceed the Method B calculated value of 2800 ppm. The Method B calculation worksheet is available as Appendix 6.5.

Based on calculated Site soil cleanup levels, a NFA determination remains appropriate for the Site.

3.2 New scientific information for individual hazardous substances for mixtures present at the Site

There is no new pertinent scientific information for the contaminants related to the Site.

3.3 New applicable state and federal laws for hazardous substances present at the Site

The cleanup at the Site was governed by Chapter 173-340 WAC (1996 ed.). WAC 173-340-702(12) (c) [2001 ed.] provides that,

"A release cleaned up under the cleanup levels determined in (a) or (b) of this subsection shall not be subject to further cleanup action due solely to subsequent amendments to the provision in this chapter on cleanup levels, unless the department determines, on a case-by-case basis, that the previous cleanup action is no longer sufficiently protective of human health and the environment."

MTCA Method A cleanup levels have not changed for gasoline-range petroleum hydrocarbons in the absence of benzene. Contamination may remain in Site soils above MTCA Method A cleanup levels, but is below calculated site-specific Method B cleanup levels for the Site.

3.4 Current and projected Site use

The Site is currently used for commercial purposes. There have been no changes in current or projected future Site or resource uses.

3.5 Availability and practicability of higher preference technologies

Based on the information currently available for the Site, the remedy is complete and no further remedial actions are necessary. The use of other remedial technologies would not decrease the risk posed by the Site to human health or the environment.

3.6 Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the remedial action were capable of detection well below MTCA Method A cleanup levels. The presence of improved analytical techniques would not effect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

- The cleanup actions completed at the Site remain protective of human health and the environment.

- Site-specific Method B soil cleanup levels have been met at the Site, and institutional controls are not necessary to maintain a no further action determination.

Based on this periodic review, the Department of Ecology has determined that additional actions are required by the property owner.

4.1 Next Review

No additional periodic reviews are required for this Site. The remedy is protective of human health and the environment without the use of institutional controls, which drive the requirement for periodic reviews at cleanup sites.

5.0 REFERENCES

Blue Mountain Shelter, Ltd. *Summary of Environmental Investigation/Partial Soil Remediation.* December 25, 1996.

Blue Eagle Engineering Company, Inc. *Progress Report.* May 27, 1998.

Blue Eagle Engineering Company, Inc. *Progress Report. March 3, 2000.*

Ecology. *Conditional No Further Action Determination.* October 2, 2002.

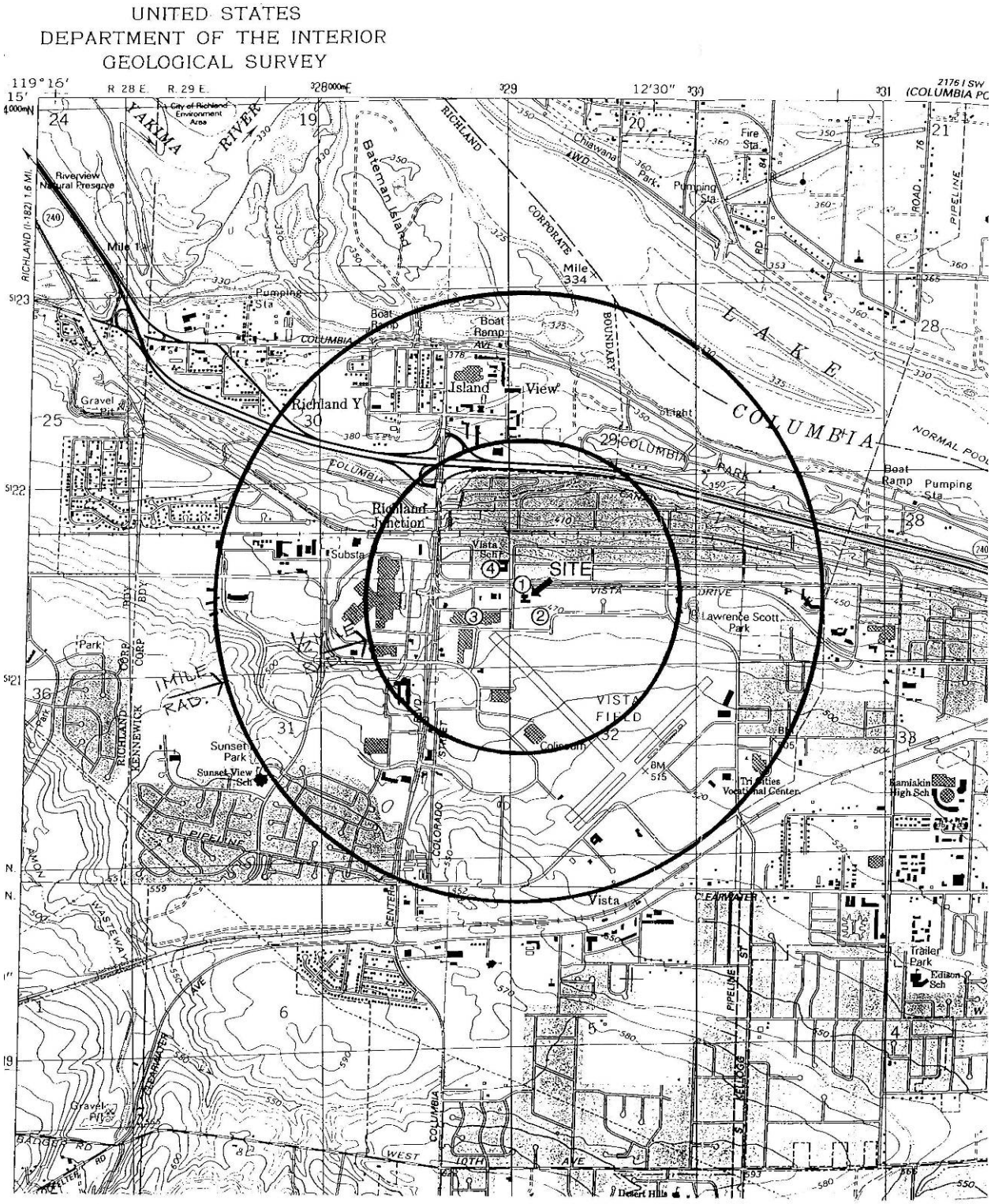
Ecology. *Decision Recommendation.* October 31, 2002.

Ecology. *No Further Action Letter*. December 3, 2002.

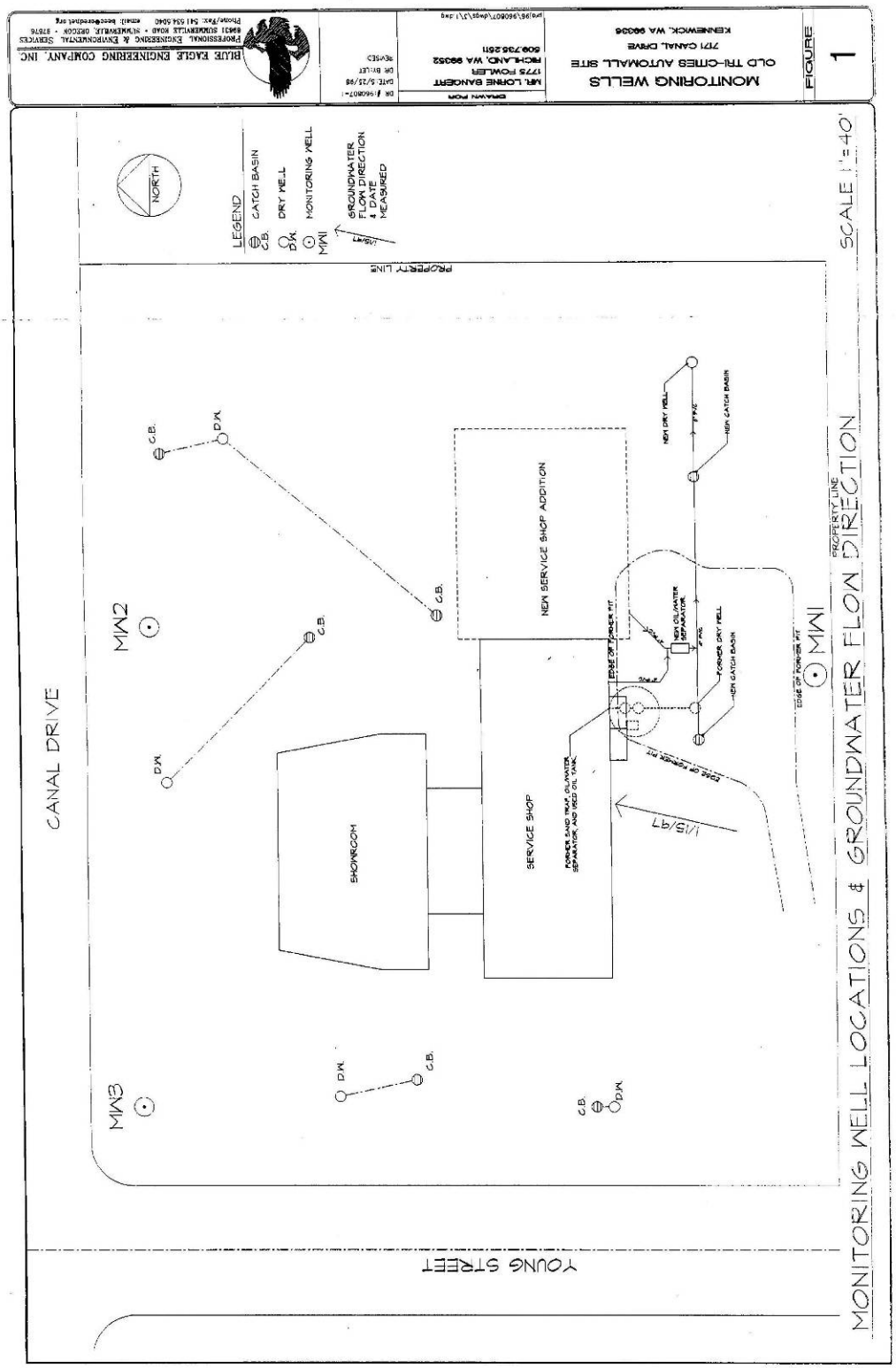
Ecology. *Site Visit.* June 16, 2010.

6.0 APPENDICES

6.1 Vicinity Map



6.2 Site Map


MONITORING WELLS
OLD TRI-CITIES AUTOMALL SITE
7171 CANAL DRIVE
KENNEWICK, WA 99336
FIGURE 1
MR. LORNE BANGERT
1775 FOWLER
RICHLAND, WA 99352
509.735.2511
BLUE EAGLE ENGINEERING COMPANY, INC.
LEGEND
C.B. CATCH BASIN
D.W. DRY WELL
MW1 MONITORING WELL
GROUNDWATER FLOW DIRECTION & DATE MEASURED
NORTH
SCALE 1"=40'
PROPERTY LINE
CANAL DRIVE
YOUNG STREET
MW1
MW2
MW3
NEW SERVICE SHOP ADDITION
SERVICE SHOP
SHOWROOM
NEW DRY WELL
NEW CATCH BASIN
FORMER DRY WELL
FORMER CATCH BASIN
NEW OIL/WATER SEPARATOR
FORMER SAND TRAP, OIL/WATER SEPARATOR, AND USED OIL TANK
EDGE OF FORMER PIT
1/15/97
MONITORING WELL LOCATIONS & GROUNDWATER FLOW DIRECTION

6.3 Photo log

Photo 1: Former Tank Location – from the south

Photo 2: Asphalt Surface Over Excavation – from the south

Photo 3: Excavation Area – from the west

Photo 4: Front of Facility – from the north

7.0 METHOD B CALCULATION WORKSHEET

Washington State Department of Ecology, Toxics Cleanup Program: Soil Cleanup Level for TPH Sites - Soil Direct Contact: Method B - Unrestricted Land Use

A2. 1B Worksheet for Calculating Soil Cleanup Levels for Protection of Human Health: (Soil Direct Contact Pathway)

Method B: Unrestricted Land Use (WAC 173-340-740)

Date: 4/15/2006
Site Name: ooo
Sample Name: 00-Jan-00

Chemical of Concern or EC group	Current Condition				Adjusted Condition			
	Measured Soil Conc @dry basis	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction								
AL_EC >5-6	50.15888672	3.99E-04			0.00E+00	0.00E+00		
AL_EC >6-8	268.4853102	2.14E-03			0.00E+00	0.00E+00		
AL_EC >8-10	188.7741645	8.51E-02			0.00E+00	0.00E+00		
AL_EC >10-12	262.3508117	1.18E-01			0.00E+00	0.00E+00		
AL_EC >12-16					0.00E+00			
AL_EC >16-21					0.00E+00			
AL_EC >21-34					0.00E+00			
AR_EC >8-10	194.7206065	2.63E-02			0.00E+00	0.00E+00		
AR_EC >10-12	384.5934862	2.60E-01			0.00E+00	0.00E+00		
AR_EC >12-16	306.011591	1.10E-01			0.00E+00	0.00E+00		
AR_EC >16-21					0.00E+00			
AR_EC >21-34					0.00E+00			
Benzene	2.410129057	7.54E-03	1.33E-07		0.00E+00	0.00E+00	0.00E+00	
Toluene	38.05691601	6.34E-03			0.00E+00	0.00E+00		
Ethylbenzene	21.56736116	2.89E-03			0.00E+00	0.00E+00		
Total Xylenes	122.1176267	8.19E-03			0.00E+00	0.00E+00		
Naphthalene	60.75319028	5.02E-02			0.00E+00	0.00E+00		
1-Methyl Naphthalene	0				0.00E+00	0.00E+00		
2-Methyl Naphthalene	0				0.00E+00	0.00E+00		
n-Hexane	0				0.00E+00	0.00E+00		
MTBE	0				0.00E+00			
Ethylene Dibromide (EDB)	0		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
Benzo(a)anthracene	0		0.00E+00	*For*	0.00E+00		0.00E+00	*For*
Benzo(b)fluoranthene	0		0.00E+00	*all*	0.00E+00		0.00E+00	*all*
Benzo(k)fluoranthene	0		0.00E+00	*cPAHs*	0.00E+00		0.00E+00	*cPAHs*
Benzo(a)pyrene	0		0.00E+00		0.00E+00		0.00E+00	
Chrysene	0		0.00E+00		0.00E+00		0.00E+00	
Dibenz(a,h)anthracene	0		0.00E+00	Σ Risk=	0.00E+00		0.00E+00	Σ Risk=
Indeno(1,2,3-cd)pyrene	0		0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00
Sum	**1900**	6.78E-01	1.33E-07			0.00E+00	0.00E+00	

TEST CURRENT CONDITION

Measured TPH Soil Conc, mg/kg= 1900.000
HI= 6.779E-01
RISK= 1.327E-07
Pass or Fail? Pass
Check Residual Saturation (WAC340-747(10))

CALCULATE PROTECTIVE CONDITION

This tool allows the user to calculate protective TPH soil concentration based on various soil quality criteria. The Workbook uses the same composition ratio as for the measured data.

Calculate Protective TPH Soil Conc

Selected Criterion: @HI=1
Most Stringent? YES
Protective TPH Soil Conc, mg/kg = 2802.94
HI = 1.00E+00
RISK = 1.96E-07

TEST ADJUSTED CONDITION

This tool allows the user to test whether a particular TPH soil concentration is protective of human health. The Workbook uses the same composition ratio as for the measured data.

Test Adjusted TPH Soil Conc

Tested TPH Soil Conc, mg/kg =
HI = 0.00E+00
RISK = 0.00E+00
Pass or Fail? Pass

4/26/2011: MTCATPH11.1_MSExcel_2007_compatible.xls