2002/2003 Monitored Natural Attenuation Report For The



Onalaska Municipal Landfill Site Onalaska, Wisconsin

ENSR Corporation August 2003 Document Number 09413-114-700



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#### 1.0 INTRODUCTION

This annual report for the Onalaska Municipal Landfill (Site) includes monitoring data for the fall 2002 and spring 2003 sampling events. The groundwater monitoring was completed in compliance with the Monitored Natural Attenuation Plan, dated December 4, 2001.

The Monitored Natural Attenuation (MNA) Plan was prepared for Region 5 of the U.S. Environmental Protection Agency (USEPA) per Revision 1 of the Statement of Work dated July 30, 2001. The USEPA decided, at the recommendation of the Wisconsin Department of Natural Resources (WDNR), to temporarily discontinue active groundwater extraction and to evaluate natural attenuation of contaminants in the groundwater. The groundwater extraction system was shut down on November 26, 2001 and remains off during the MNA study. This report discusses the purpose of MNA, background information on the Site, details on the MNA study, a summary of current contaminant concentrations and distribution, and discusses the effect natural attenuation has on controlling the spread of contaminants in groundwater.

#### 1.1 PURPOSE

The MNA program was implemented in the fall of 2001 to replace the original groundwater monitoring program. The primary objectives of the MNA program are to assess:

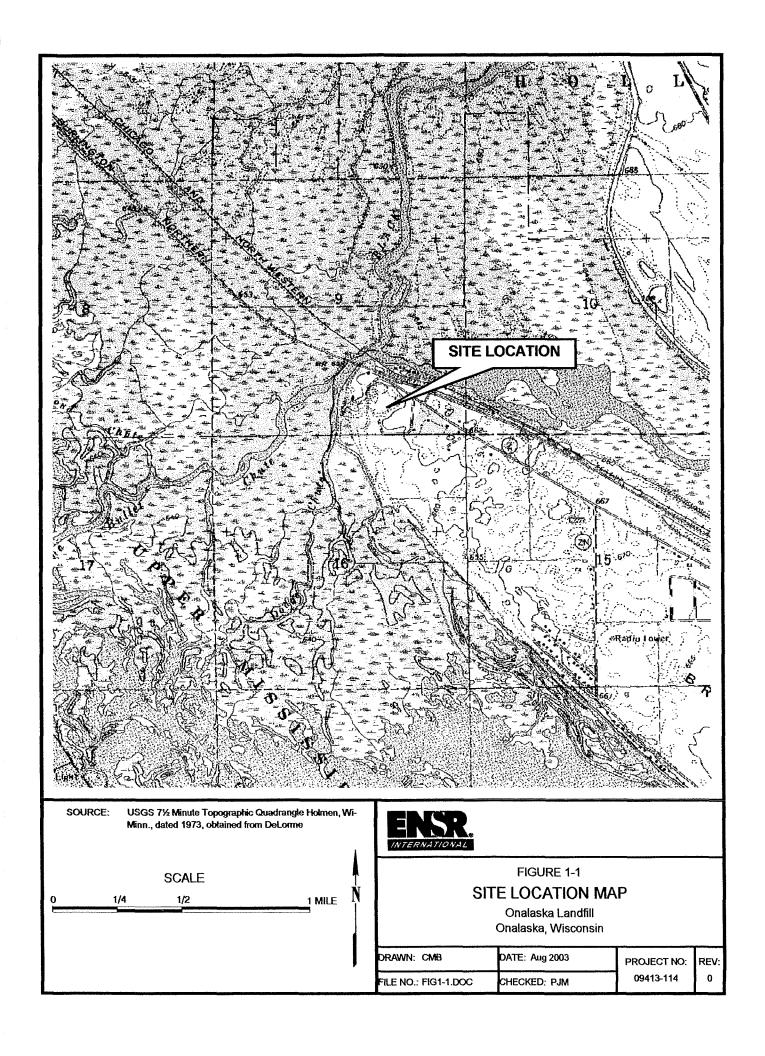
- Whether there are meaningful trends of contaminant mass decreasing over time at appropriate monitoring points.
- Whether there are indicators of active natural attenuation at the site based on hydrogeological and geochemical data.
- Whether natural attenuation is an acceptable modification to the remedy for the Site.

The extraction wells and treatment system have been placed on "stand by" and will remain off for the duration of the MNA study. The study is expected to last several years, while the effectiveness of natural attenuation is evaluated. If it is determined that the natural attenuation will achieve the clean up criteria, then MNA would be implemented, once approved, as a modification to a ROD remedy.

#### 1.2 BACKGROUND

#### 1.2.1 PHYSICAL BACKGROUND

The Site is approximately 10 miles north of the city of La Crosse, Wisconsin, near the confluence of the Mississippi and Black rivers. **Figure 1-1**, attached, illustrates the Site Location. The Site was mined, as a sand and gravel quarry, then used as a municipal and industrial waste landfill, between 1969 and 1980. Unconsolidated deposits at the site are 135 to 142 feet thick and consist primarily of sand and gravel. Beneath the unconsolidated deposits lies sandstone bedrock. Natural groundwater flow direction in the unconsolidated material (documented prior to groundwater extraction) is predominantly south-southwesterly toward the wetlands that border the Black River. During high river stages (i.e. spring), the groundwater flow direction is toward the south-southeast. Average groundwater flow velocity beneath the site was estimated during the Remedial Investigation (RI) to range between 55 and 110 feet per year, with an estimated average of 70 feet per year.





#### 1.2.2 CONTAMINANT BACKGROUND

Industrial, commercial, and municipal wastes are reportedly mixed throughout the landfill deposits. For a time, open burning occurred at the site. Until early 1971, when open burning was banned, industrial solvents were burned regularly, at apparently random locations throughout the landfill. Some refuse was also burned periodically. Open burning reportedly continued, even though banned, until as late as 1979.

Previous Site investigations determined that liquid industrial wastes disposed of at the landfill consisted primarily of naphtha-based solvents used in a metal cleaning process and solvent wastes from paint spray gun cleaning and machine shop cleaning fluids. At least two kinds of naphtha were disposed of at the site, high-flash naphtha and VM&P or Stoddard naphtha. These naphthas were probably used in a paint cleaning process at one of the nearby plants and as general solvents.

In September 1982, the DNR sampled and analyzed water from Site monitoring wells and nearby private wells for compliance with drinking water standards for organic and inorganic constituents. The investigations indicated that groundwater contamination had occurred. The barium concentrations in the water from a residential well south of the Site exceeded the drinking water standard, and five organic compounds were detected above background levels.

On May 2,1983, an EPA Potential Hazardous Waste Site inspection report was submitted. In September 1984, the Onalaska Landfill was placed on the National Priorities List.

The original groundwater monitoring program at the Site was implemented in 1995. From 1995 through the 2001 spring monitoring event, groundwater samples were obtained from monitoring wells, extraction wells, and two nearby residential wells. In addition to sampling, groundwater elevations were measured in monitoring wells, air injection wells (i.e. bioventing wells), and piezometers. From March 1995, through December 1996, sampling was conducted quarterly. In 1997, the sampling frequency was reduced from quarterly to semiannually. The wells included in the groundwater monitoring program, as well as the parameters analyzed, have changed on several occasions, since the groundwater monitoring program was implemented in 1995. The rationale for the changes prior to the MNA plan and previous groundwater monitoring results are documented in the Annual Groundwater Quality and Capture Reports. Each change was approved by the USEPA prior to being implemented.

Preliminary investigations conducted at the Site determined that contaminant concentrations in the groundwater at individual monitoring well locations exceeded one or more Federal or State standards or criteria. The Safe Drinking Water Act maximum contaminant levels (MCLs) for arsenic, barium, benzene, 1,1-dichloroethene, toluene, 1,1,1-trichloroethane, trichloroethene, and xylene were exceeded at one or more monitoring well locations. Concentrations of toluene were observed as high as 43,000 ug/L. Of the three chlorinated compounds initially analyzed for, 1,1,1-TCA was the most prevalent, and was found at concentrations as high as 730 ug/L. The majority of the VOCs detected were found in shallow monitoring wells (MW-5S and MW-3S and B4S) and were BTEX compounds. The vertical extent of BTEX and chlorinated compounds contamination was found to be confined to the upper 10 to 20 feet of the aquifer. However, ethylbenzene,1,1-DCA and chloroethane were detected at depths up to 50 to 60 feet below the water table. The vertical extent of semivolatile organic compounds (SVOCs) contamination was also mostly confined to the upper 10 to 20 feet of the aquifer. There were no SVOCs detected in any of the deep monitoring wells.

Monitoring wells along the southwestern edge of the landfill and southwest of the most commonly exhibited inorganic chemicals above background. These wells were primarily shallow and medium wells that included MW-2S, MW-2M, MW-3S, MW-4S, MW-B4S, MW-5S, and MW-8S. Four chemicals: barium, iron, manganese, and sodium, were detected above background with greater frequency than the other inorganic chemicals. The higher concentrations of these four chemical tends to occur in wells along the southwestern edge of the landfill or southwest of the landfill.



#### 1.3 CLEANUP AND CRITERIA

The Record of Decision (ROD), signed August 14,1990, defines the selected remedy and addresses the goals of the remedial action. The selected action for the remedy includes the following remedial actions for groundwater:

- Extraction and treatment of the groundwater contaminant plume to meet Federal Safe Drinking Water Act (SDWA) drinking water standards and State of Wisconsin groundwater quality standards
- Periodic monitoring of the groundwater contaminant plume
- Deed restrictions limiting surface and groundwater use at the Onalaska Municipal Landfill site
- Continued reliance on state institutional controls governing groundwater use within the proximity of landfills

The remedial actions are currently ongoing (e.g. monitoring) or are in place (e.g. institutional controls).

Under the remedy selected in the ROD, the following cleanup standards were adopted:

- The groundwater contaminant plume located at any point beyond the property boundary or design management zone (DMZ) must meet the following criteria:
  - Preventive Action Limits, (PALs) from Wisconsin Administrative Code Chapter NR 140:
- The groundwater contaminant plume located at the landfill waste boundary must meet:
  - Maximum Contaminant Levels (MCLs) from the Safe Drinking Water Act, 40 CFR 141.61 and 40 CFR 143
  - > Non-zero Maximum Contaminant Level Goals (MCLGs) from the Safe Drinking Water Act, 40 CFR 141.50

The DMZ defined for the Onalaska site extends 250 feet horizontally from the waste boundary as shown in Figure 1-2. The MCLs and nonzero MCLGs must be met at the landfill waste boundary and the more stringent Wisconsin standards (PALs) must be met at any point beyond the property boundary or the DMZ. The DMZ as defined in NR 140 is a 3-dimensional boundary surrounding a regulated facility and extends from the ground surface through all saturated geological strata.

Specific cleanup standards (i.e., chemical-specific concentrations) were established in the ROD for 11 indicator chemicals. (e.g. Chemicals of Concern (COC)) The USEPA amended the ROD on October 10, 2000, by an Explanation of Significant Differences (ESD) to revise the cleanup standards for these chemicals to the latest NR 140 PALS and Enforcement Standards (ESs). The list of contaminants included in the MNA Plan consists of the original 11 indicator chemicals, other contaminants detected at concentrations above PALs during the Remedial Investigation, and contaminants identified above Wisconsin PALs since the groundwater monitoring program was implemented in 1995. This list and the applicable cleanup standards are presented in Table 1-1.

If it becomes apparent that it is not technically or economically feasible to achieve a PAL, then a Wisconsin Alternative Concentration Limit (WACL) may be established. Except where the background concentration of a compound exceeds the ES, the WACL established may not exceed the ES for that compound. A WACL is calculated using procedures defined by the WDNR.



If it becomes apparent that it is technically impracticable to achieve the groundwater cleanup standards, including potential WACLs, then USEPA in consultation with the WDNR may consider the use of alternate methods to control the groundwater contaminant plume or source to achieve the standards. If those alternate methods cannot attain groundwater cleanup standards, including potential WACLs, then a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) waiver may be considered.

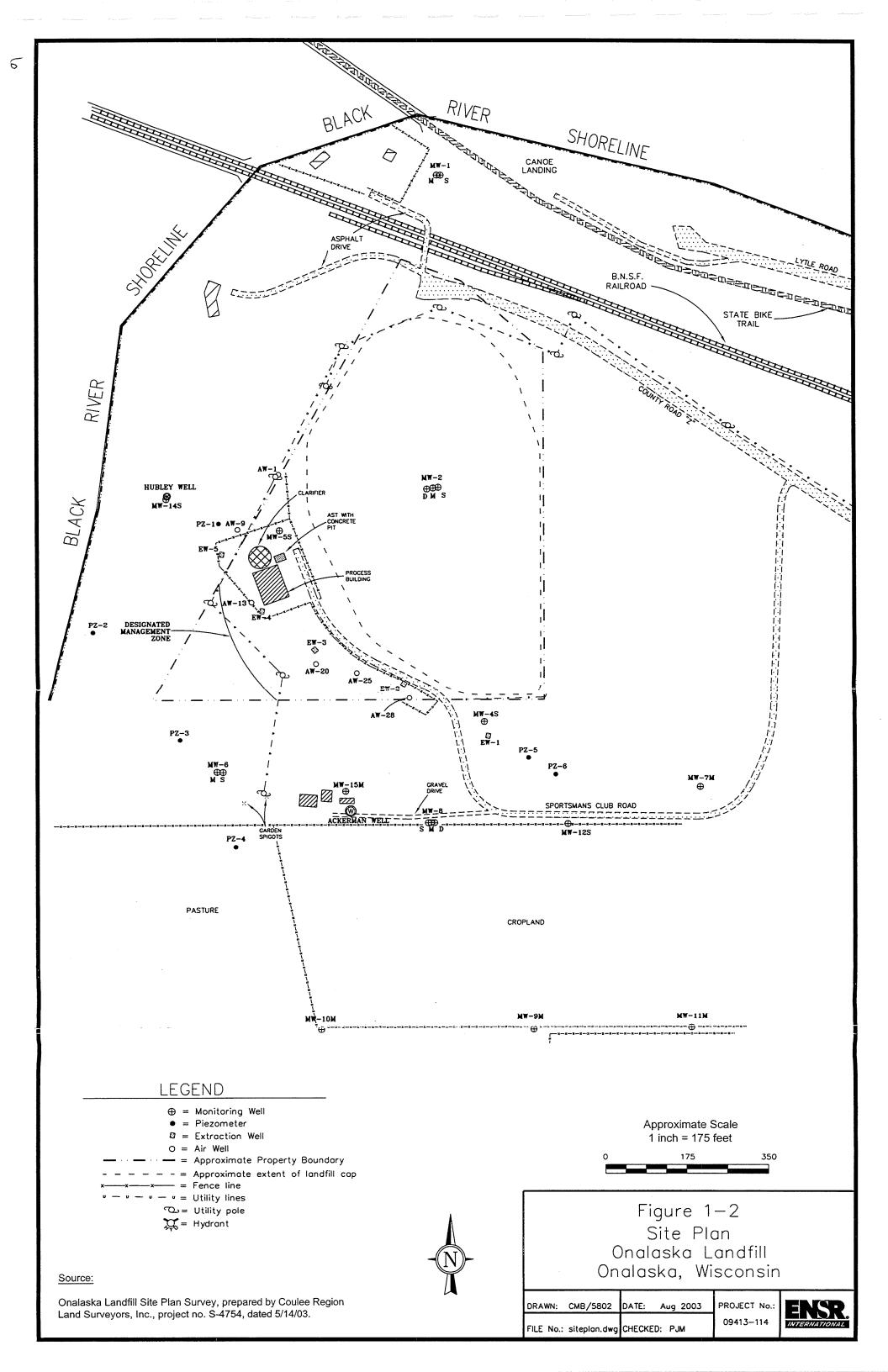




TABLE 1-1
Contaminants Included in the Natural Attenuation Plan
Onalaska Municipal Landfill

Contaminants	Wisconsin NR140 PAL [ug/L]	Wisconsin NR140 ES [ug/L]	Federal MCL [ug/L]
Organic Contaminants			
BETX			
Benzene	0.5	5	5
Ethylbenzene	140	700	700
Toluene	200	1,000	1,000
Total Xylenes	1,000	10,000	10,000
Chlorinated VOCs	85	850	NI A
1,1-Dichioroethane	60	650	N.A.
1,1-Dichloroethene	0.7	7	7
1,1,1-Trichloroethane	40	200	200
cis-1,2-Dichloroethene	7	70	70
Trans-1,2-Dichloroethene.	20	100	100
Trichloroethene	0.5	5	5
Tetrachloroethene	0.5	5	5
Methylene Chloride (MW-4 Only)	0.5	5	N.A.
Vinyl Chloride (Chloroethene)	0.02	0.2	2
Other VOCs			
1,2,4 and 1,3,5 Trimethylbenzene	96	480	N.A.
Naphthalene	8	40.	N.A.
Metal Contaminants			
Arsenic	5	50	10
Barium	400	2,000	2,000
Iron	150	300	N.A.
Lead	1.5	15	15
Manganese	25	50	N.A.
Cadmium	0.5	5	5
Cobalt	8	40	N.A.
Mercury	0.2	2	2
Vanadium	6	30	N.A.



#### 2.0 NATURAL ATTENUATION MONITORING PROGRAM

The MNA Plan was developed to address the first two lines of evidence as provided in "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites" (USEPA, 1999). The first two lines of evidence are:

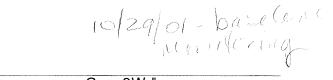
- The demonstration of meaningful trends of decrease of contaminant mass over time at appropriate monitoring points
- The demonstration of active natural attenuation at the site with hydrogeological and geochemical data and the calculation of degradation rate processes

As recommended in the USEPA document, the third line of evidence, field or bench scale studies, could be done in the future, but is only recommended for consideration, if the first two lines of evidence are inconclusive.

#### 2.1 MONITORING WELL NETWORK

Selected groundwater monitoring wells, piezometers, and air injection wells will be used to monitor groundwater during the natural attenuation study. The wells are separated into two groups based on proximity to the landfill. The two groups of wells are listed below in Table 2-1.

TABLE 2-1 Wells Listed by Group Onalaska Municipal Landfill



	Group 1 Wells		Group 2 V	Vells
MW-1 S	MW-5S	AW-9	MW-6S	MW-15M
MW-11M	MW-14S	AW-13	MW-6M	PZ-2
MW-2S	PZ-1	AW-20	MW-8S	PZ-3
MW-2M	PZ-5	AW-25	MW-8M	PZ-4
MW-4S	AW-1	AW-28	MW-12S	a.

a. The Ackerman and Hubley residential wells will be sampled once per year to verify they are not impacted. However, these wells will not be used in the monitored natural attenuation study.

Both Group 1 and 2 wells were monitored for the first MNA sampling event the week of October 29, 2001, to establish baseline conditions at the time the groundwater extraction system was shut down. The system was shut down prior to sampling and was restarted after sampling to use up the remaining treatment chemicals. The system then was put on standby on November 26, 2001 and remains on standby except for the monthly "bumping of the system".

Group 1 wells are sampled and analyzed semiannually. The Group 2 wells are sampled annually. If concentrations in the Group 2 wells increase and begin to approach PALs, or WACLs, in cases where background concentrations exceed PALs, the monitoring frequency will be reviewed and Group 2 wells may be sampled more frequently. Monitoring frequency in Group 1 wells also may be increased as needed to better evaluate whether natural attenuation is occurring for contaminants detected at elevated concentrations.

Groundwater level measurements are gauged semiannually during the sampling events in all the Group 1 and 2 wells.



#### 2.2 MONITORING RATIONALE

As described in the MNA Plan, the following discusses the monitoring rationale. Most of the Group 1 wells were selected to provide approximately equally spaced sampling locations downgradient of the landfill. The wells were selected so that they traverse the entire historical limits of the contaminated groundwater plume from the landfill. As a secondary consideration, wells were selected so that there is a sampling location near each idle extraction well. MW-1S and MW-1M (upgradient wells) are included in the Group 1 wells in order to gather sufficient data for statistical evaluation of background groundwater characteristics. Sampling from these wells may be reduced to once per year (i.e.; these wells will be recategorized from Group 1 to Group 2 wells) after eight useable results are accumulated for each relevant parameter unless the characteristics in these wells are observed to fluctuate substantially on a semiannual basis. MW-2S and MW-2M were included in the Group 1 wells to provide information about groundwater quality below the landfill. AW-9 was included in the Group 1 wells with two considerations in mind: it will provide information regarding groundwater quality at a distance from the landfill comparable to most of the other selected air wells; and it will also provide information that can be compared to wells MW-5S and AW-1, which are closer to the landfill perimeter. Similarly, PZ-1 was selected to provide an additional monitoring point progressively further from AW-9 and inner wells MW-5S and AW-1. MW-14S was included for comparison to well AW-1 and nearby well PZ-1. Comparison of contaminants between these wells may provide information that can be used to determine whether natural attenuation processes are occurring in the first 300 feet from the landfill.

The Group 2 wells were selected from existing wells located toward the outer periphery of the estimated historical limits of contamination from the landfill. Groundwater data from the Group 2 wells will allow determination of whether natural attenuation processes are resulting in the decrease of contaminant mass when compared to the Group 1 wells. The primary emphasis will be the comparison of contaminant concentrations between Group 1 and Group 2 wells for evaluating the suitability of natural attenuation processes for the site.

Monitoring, piezometer, and air injection wells are 2 inches in diameter but the screen length and elevation relative to the water table vary between wells. The screen length on the monitoring wells and piezometers is 10 feet. The screen length on the air injection wells is 5 feet. Most of the screen intervals for the shallow monitoring points straddle the water table except for two of the piezometers and one monitoring well.

#### 2.3 MONITORING ANALYTES

Analytes for sampling rounds will include the VOCs, metals, and natural attenuation parameters specified in Table 2-2. Currently, at the request of the WDNR, results for 36 VOC are reported by the laboratory and include all of the VOCs identified on Table 2-2. Table 2-2 includes the parameters to be monitored, rationale for inclusion, Wisconsin groundwater PAL and ES criteria.



# **TABLE 2-2**Parameter List and Relevant Criteria for Monitored Natural Attenuation Onalaska Municipal Landfill

# State of WI Groundwater Criteria

		Groundinater Oriteria	
Parameter	Rationale	PAL (ug/L)	WIES (ug/L)
Organic Constituents			
BETX			
Benzene	COC	0.5	5
Ethylbenzene	COC	140	700
Toluene	COC	200	1,000
Total Xylenes	COC	1,000	10,000
Chlorinated VOCs			
1,1-Dichloroethane	COC	85	850
1,1-Dichloroethene	COC	0.7	7
1,1,1 –Trichloroethane	COC	40	200
cis-1,2-Dichloroethene	COC	7	70
trans-1,2-Dichloroethene	COC	20	100
Trichloroethene	COC	0.5	5
Tetrachloroethene	COC	0.5	5
Methylene Chloride (MW-4S only)	COC	0.5	5
Vinyl Chloride (Chloroethene)	COC	0.02	0.2
Other VOCs			
1,2,4-and 1,3,5-Trimethylbenzene	COC	96	480
SVOCs			
Naphthalene	COC	8	40
Inorganic Constituents			
Arsenic	COC	5	50
Barium	COC	400	2,000
Iron	COC	150	300
Lead	COC	1.5	15
Manganese	COC	25	50
Cadmium	COC	0.5	5
Cobalt	COC	8	40
Mercury	COC	0.2	2
Vanadium	COC	6	30
variaulum			



#### **Table 2-2 Continued**

# Parameter List and Relevant Criteria for Monitored Nattural Attenuation Onalaska Municipal Landfill

	State of WI Groundwater Criteria		
Parameter	Rationale	PAL (ug/L)	WI ES (ug/L)
Natural Attenuation Parameters			
Field Parameters Oxidation-Reduction Potential	Optimal values of < 50 mV indicate reductive dechlorination may be occurring.		
Dissolved Oxygen	Concentrations in groundwater < 1mg/L dissolved oxygen indicate anaerobic conditions present. > 1mg/L indicate aerobic conditions.		
рН	Optimum range of pH is 5 to 9.		
Temperature Specific Conductance Laboratory Parameters			
Nitrate	Concentrations in groundwater > 1,000 ug/L nitrate may compete with reductive processes of CVOCs.	2,000	10,000
Sulfate	Can be used as electron acceptor once oxygen, nitrate, and iron have been depleted or reduced. Concentrations > 20,000 ug/L may compete with reductive pathway.	125,000	250,000
Iron (already included above)	Concentrations in groundwater > 1,000 ug/L may indicate iron reduction has occurred and reductive dechlorination of CVOCs is possible.		
Manganese (already included above)	Concentrations in groundwater > 1,000 ug/L may indicate manganese reduction has occurred and reductive dechlorination of CVOCs is		
Methane, ethane, ethene (dissolved gasses)	possible. Higher concentrations of methane may indicate methanogenesis is occurring, ethene and ethane degradation products of vinyl chloride.		
Alkalinity	Reflects higher concentrations of calcium and magnesium, indicating the microbil respiration is releasing CO2 into the groundwater.		
Chloride	A measure of CVOC degradation.	125,000	250,000
Total Organic Carbon	A general measure of organics' concentration, including those naturally occurring.		

a. State of Wisconsin Groundwater Quality Standards as specified in NR 140.

b. Natural Attenuation Parameters recommended in Technical Protocols cited in Final OSWER Directive (USEPA April 1999)



#### 2.4 SAMPLING METHODOLOGY

Groundwater sampling followed the guidelines presented in specific Site documents including the Natural Attenuation Plan, the QAPP, and the Sampling and Analyses Plan, and followed the WDNR Groundwater Sampling Desk Reference. Prior to purging each monitoring point, the depth to groundwater in each monitoring point was gauged and recorded in the project field book and on sample collection data sheets.

Field parameters were measured using a flow-through cell and collected during the purging process. One of three purging techniques was employed; a dedicated Whaler pump and tubing; a peristaltic pump and disposable tubing; or a single use disposable bailer. The wells were purged until all parameters including the more sensitive parameters of dissolved oxygen (DO) and oxidation reduction potential (ORP) stabilized to within 10 percent between two consecutive well volumes of purge water. At a minimum, three well volumes were purged from each monitoring point prior to the collection of groundwater samples. Data collected during the purging process, including specific conductivity, temperature, pH, DO and ORP, were recorded on the sample collection data sheets.

For wells where pumps were used, sampling was completed with the sampling pump intake located approximately half way down the submerged screened interval. The pump rate was reduced to a low level after purging in order to simulate low flow sampling.

The residential wells were sampled from an outside spigot after the well had run for approximately 15 minutes immediately prior to sampling. According to the residential well owners, the wells had been running intermittently throughout the day prior to sampling.

Groundwater samples were collected using the respective purging equipment and directly placed in laboratory-supplied containers. The samples were stored on ice in a cooler and sent overnight under chain-of-custody to Severn Trent Laboratories in Canton, Ohio.



#### 3.0 NATURAL ATTENUATION MONITORING RESULTS

Currently, groundwater samples are collected from 26 monitoring points comprised of six airinjection wells, five piezometers, 13 monitoring wells, and two residential wells. As discussed further below, the monitoring program has shown that two organic contaminants, trimethylbenzene and methylene chloride, remain above the ES established by the State of Wisconsin. Two inorganic metals, manganese and iron remain above their respective criteria however, are not considered by the State of Wisconsin to be substances of public health concern, but rather aesthetic (taste or odor) criteria. The following are the results of the groundwater monitoring completed during the December 2002 and April 2003 monitoring events.

#### 3.1 GROUNDWATER FLOW

Groundwater levels were gauged during the December 2002 and April 2003 monitoring events. Groundwater elevation data from these monitoring events are presented in Table 3-1. The top of casing elevations and locations of each monitoring point were surveyed on April 22, 2003 by Coulee Region Land Surveyors of La Crosse, Wisconsin. Groundwater elevation maps from the December 2002 event for the shallow and medium zone wells are shown on Figures 3-1 and 3-2, respectively. Contours were not included on the December 2002 due to the irregularity of the contour lines. Groundwater elevation contour maps from the April 2003 event for the shallow and medium zone wells are shown in Figures 3-3 and 3-4, respectively. Groundwater elevations, gradients, and flow directions are discussed below.

The inferred direction in the shallow groundwater at the Site is towards the south-southeast. The inferred direction of groundwater flow in the medium zone, using the December 2002 data, was towards the southwest and towards the southeast using the April 2002 gauging data.

Using the April 2002 gauging data the hydraulic gradient in the shallow zone was 0.0016 feet/foot and the hydraulic gradient in the medium zone was 0.0012 feet/foot.

The April 2003 groundwater elevation (both shallow and medium) at the site was approximately 2 to 3 feet higher then the December 2002 groundwater elevation. The groundwater flow at the site may be affected by the water level in the nearby Black River.

#### 3.2 GROUNDWATER QUALITY

Monitoring for Natural Attenuation began in October 2001 (baseline natural attenuation monitoring event). This baseline sampling event was completed immediately after the system was turned off. The system was reactivated (for approximately one month) after the baseline sampling event was completed to use up remaining chemicals used in the treatment process. The following are the findings from the most recent two sampling events (considered the second and third MNA sampling event) completed in December 2002 and April 2003. The VOC and metals results from the December 2002 and April 2003 sampling events are summarized below and contained as **Table 3-2**. Attachment A contians the abbreviated analytical report. The results for the natural attention parameters are discussed in Section 4.0. The complete analytical data packages for the sampling events are stored in ENSR's Minneapolis office.

# Table 3-1 Groundwater Elevation Table Onalaska Landfill Onalaska, Wisconsin

Date of Water Level Measurements: December 12, 2002					
	Elevation Top	Depth to	Elevation of		
Well Number	of Casing	Groundwater	Groundwater		
Ackerman Well	658.28	NM	NM		
AW-01	663.62	20.06	643.56		
AW-09	660.12	16.87	643.25		
AW-13	658.85	15.25	643.60		
AW-20	652.71	9.32	643.39		
AW-25	657.26	13.80	643.46		
AW-28	660.91	17.44	643.47		
EW-1	666.86	NM	NM		
EW-2	660.94	NM	NM		
EW-3	657.61	NM	NM		
EW-4	659.98	NM	NM		
EW-5	659.07	NM	NM		
Hubley Well	657.20	NM	NM		
MW-10m	657.74	NM	NM		
MW-11m	658.35	NM	NM		
MW-12s	664.22	20.82	643.40		
MW-14s	656.05	12.36	643.69		
MW-15m	656.98	13.66	643.32		
MW-1m	664.67	20.90	643.77		
MW-1s	664.79	20.67	644.12		
MW-2d	673.9	NM	NM		
MW-2m	673.64	30.09	643.55		
MW-2s	672.85	29.30	643.55		
MW-4s	665.84	22.29	643.55		
MW-5s	657.11	13.57	643.54		
MW-6m	649.71	6.36	643.35		
MW-6s	647.86	4.51	643.35		
MW-7m	663.74	· NM	NM		
MW-8d	660.60	NM	NM		
MW-8m	660.71	17.19	643.52		
MW-8s	660.74	17.36	643.38		
MW-9m	657.32	NM	NM		
PZ-01	656.40	12.88	643.52		
PZ-02	651.36	7.98	643.38		
PZ-03	648.96	5.35	643.61		
PZ-04	649.13	5.74	643.39		
PZ-05	661.98	18.46	643.52		
PZ-06	660.78	NM	NM		

#### **Notes**

- 1. Top of Casing elevation surveyed by Coulee Region Land Surveyors, Inc. on April 22, 2003.
- 2. NM = Water level was not measured.

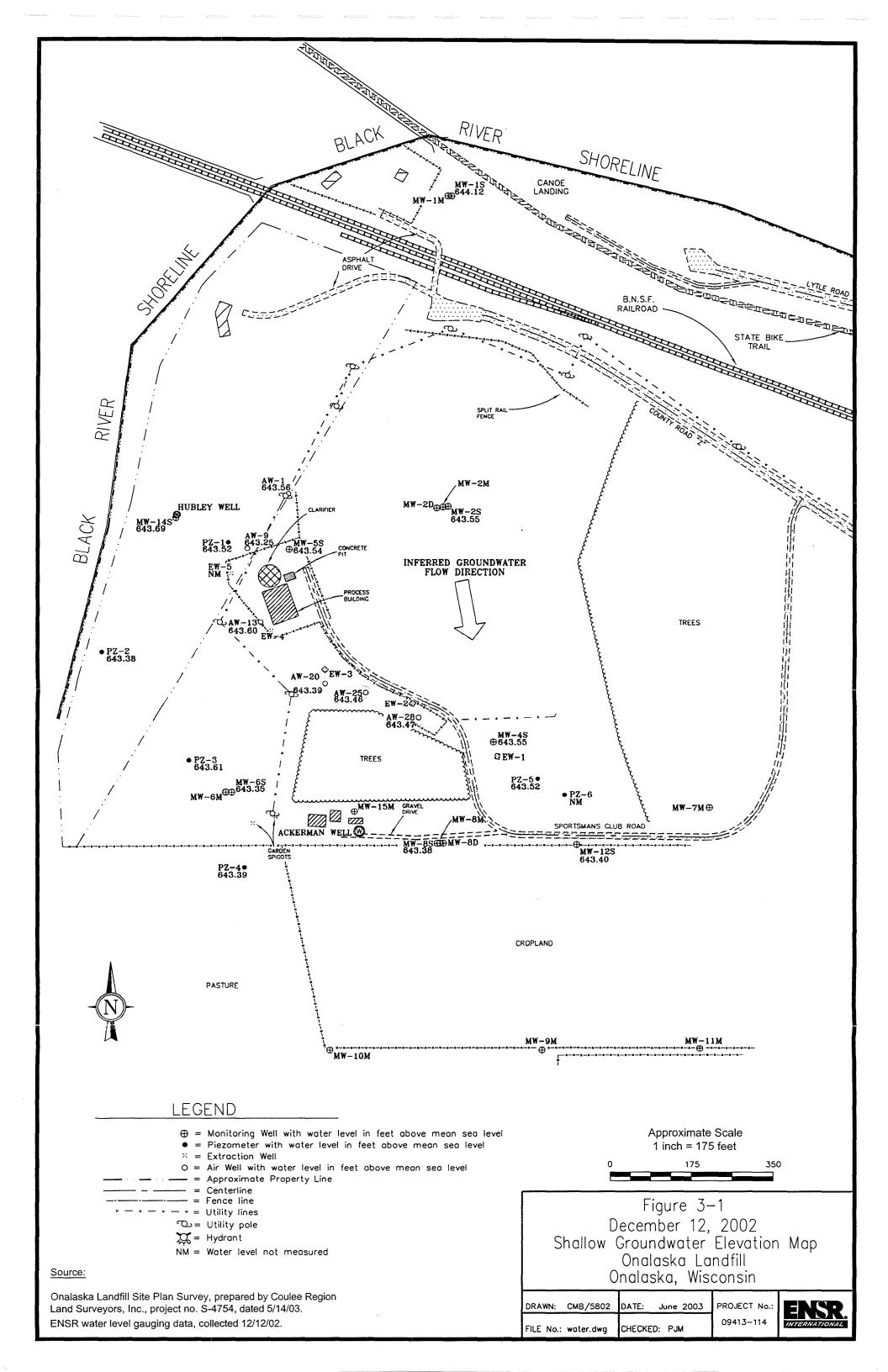
# Table 3-1 Groundwater Elevation Table Onalaska Landfill Onalaska, Wisconsin

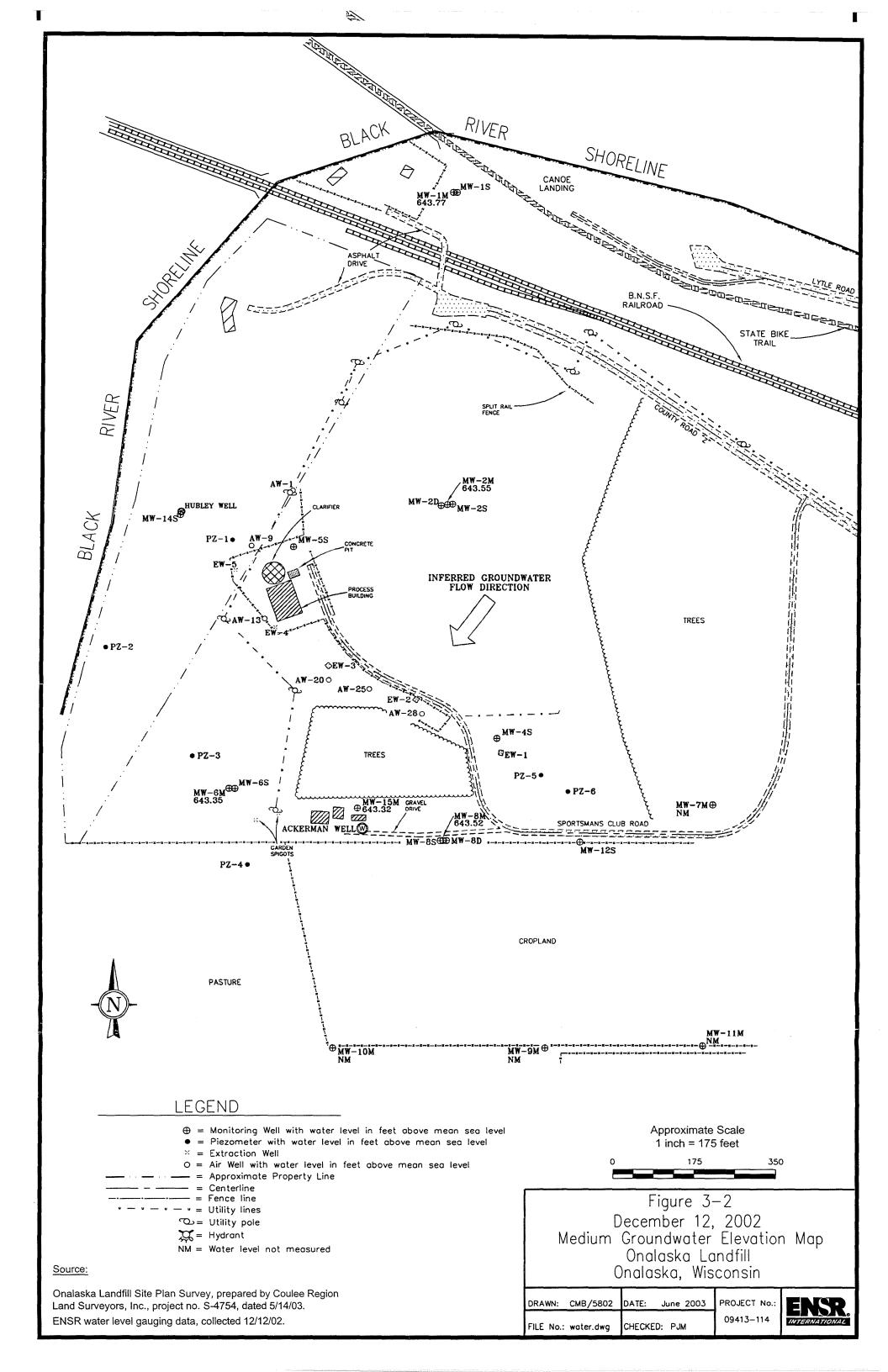
Date of Water Level Measurements: April 22, 2003				
14/-11 At	Elevation Top	Depth to	Elevation of	
Well Number	of Casing	Groundwater	Groundwater	
Ackerman Well	658.28	NM	NM	
AW-01	663.62	17.06	646.56	
AW-09	660.12	13.66	646.46	
AW-13	658.85	12.72	646.13	
AW-20	652.71	6.81	645.90	
AW-25	657.26	11.27	645.99	
AW-28	660.91	15.21	645.70	
EW-1	666.86	NM	NM	
EW-2	660.94	NM	NM	
EW-3	657.61	NM	NM	
EW-4	659.98	NM	NM	
EW-5	659.07	NM	NM	
Hubley Well	657.20	NM	NM	
MW-10m	657.74	12.28	645.46	
MW-11m	658.35	13.36	644.99	
MW-12s	664.22	18.81	645.41	
MW-14s	656.05	9.40	646.65	
MW-15m	656.98	11.27	645.71	
MW-1m	664.67	17.29	647.38	
MW-1s	664.79	17.06	647.73	
MW-2d	673.90	27.49	646.41	
MW-2m	673.64	27.28	646.36	
MW-2s	672.85	26.57	646.28	
MW-4s	665.84	20.06	645.78	
MW-5s	657.11	10.71	646.40	
MW-6m	649.71	3.78	645.93	
MW-6s	647.86	1.95	645.91	
MW-7m	663.74	18.39	645.35	
MW-8d	660.60	14.98	645.62	
MW-8m	660.71	15.11	645.60	
MW-8s	660.74	15.17	645.57	
MW-9m	657.32	12.18	645.14	
PZ-01	656.40	9.90	646.50	
PZ-02	651.36	4.76	646.60	
PZ-03	648.96	2.71	646.25	
PZ-04	649.13	3.24	645.89	
PZ-05	661.98	16.31	645.67	
PZ-06	660.78	15.25	645.53	

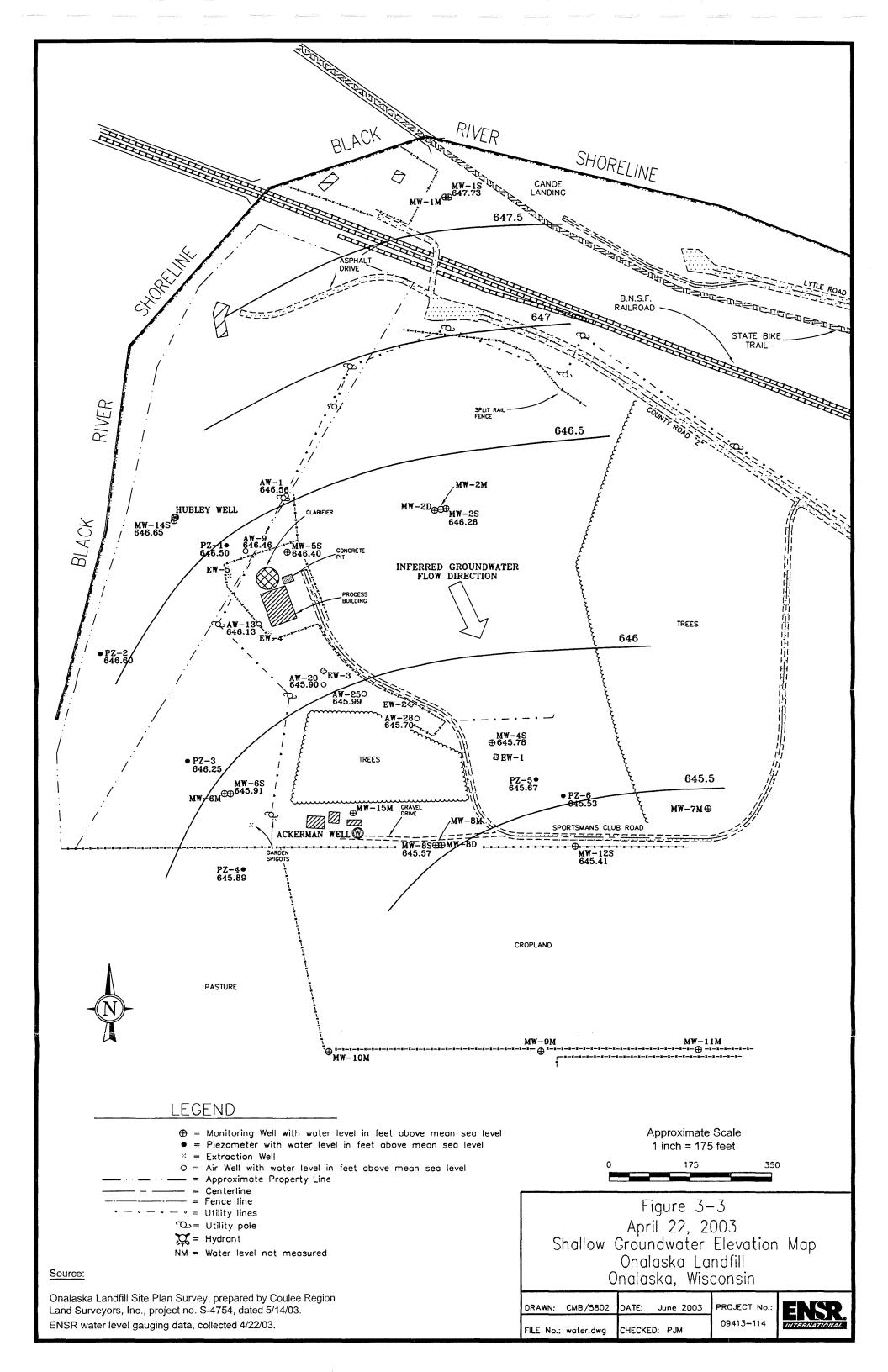
11

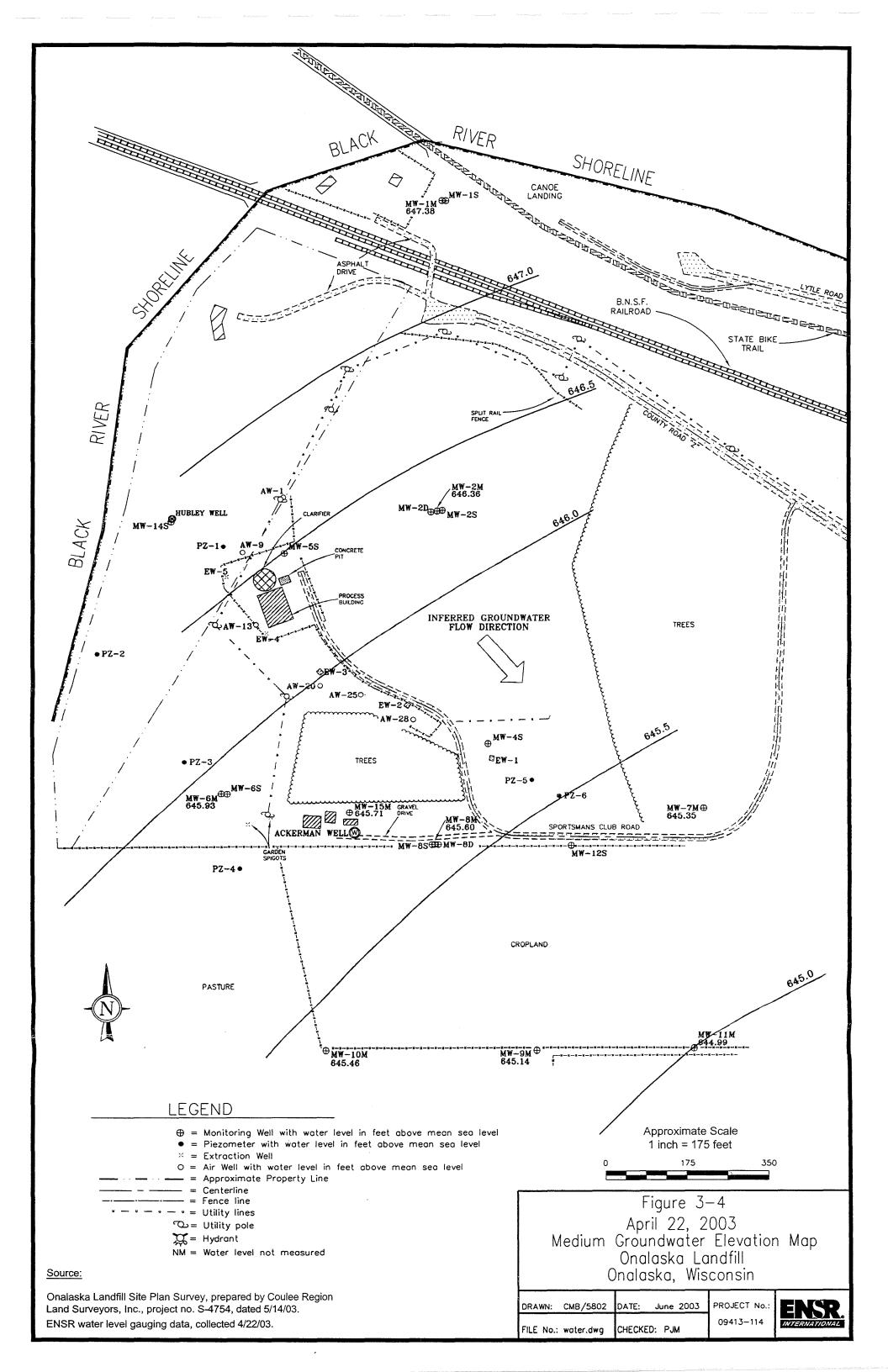
#### Notes:

- 1. Top of Casing elevation surveyed by Coulee Region Land Surveyors, Inc. on April 22, 2003.
- 2. NM = Water level was not measured.









# Table 3-2 AW-1 Summary of Detected Compounds Former Onalaska Landfill

Volatile Organic	С	
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Compounds (VOC), ug/L	12/12/2002	4/23/2003	PAL	ES
1,2,4-Trimethylbenzene	25	8.4	96	480
1,3,5-Trimethylbenzene	22	6.1	96	480
Acetone	6	< 1.1	200	1000
Methylene chloride	3.8	< 0.29	0.5	5
Xylenes (total)	4	4.7	1,000	10,000

Metals, mg/L

11.014.0, 11.5.				
Arsenic	< 0.0021	< 0.0021	0.005	0.05
Barium	0.25	0.13	0.4	2
Cadmium	0.0032	< 0.00028	0.0005	0.005
Cobalt	0.0043	< 0.00074	0.008	0.04
Iron	4.5	0.39	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	6	0.7	0.025	0.05
Mercury	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 3	< 3	 
Ethene	< 2.9	< 2.9	 
Methane	1500	690	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	2.1	5.6	125	250
Nitrate as N	< 0.0076	0.83	2	10
Sulfate	9.1	6.2	125	250
Total Alkalinity	290	210		
Total Organic Carbon	6	2		

рН		6.98	 
Conductivity (mS/cm)		0.441	 
Temperature (C)	To 400 Apr	7.87	 
ORP (mV)		178	 
Dissolved Oxygen (mg/L)		4.5	 

Table 3-2 AW-9 **Summary of Detected Compounds** Former Onalaska Landfill

Compounds (VOC), ug/L	12/12/2002	4/23/2003	PAL	ES
1,2,4-Trimethylbenzene	1.6	< 0.37	96	480
Acetone	2.9	< 1.1	200	1000
Methylene chloride	3.8	0.34	0.5	5
	X control of the second			
Metals, mg/L				
Arsenic	< 0.0021	< 0.0021	0.005	0.05
Barium	0.072	0.051	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	0.008	0.04
Iron	0.067	< 0.042	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	0.041	0.016	0.025	0.05
Mercury	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03
Dissolved Gases, ug/L	< 0.3	< 0.6	T	
Ethene	< 0.29	< 0.58		
Methane	260	220		
Methane	200		<u>.</u>	
Natural Attenuation				
Parameters, mg/L				
Chloride	3.1	3	125	250
Nitrate as N	0.42	1.1	2	10
Sulfate	3.5	3.1	125	250
Total Alkalinity	220	170		
Total Organic Carbon	1	0.8		
				***************************************
рН	+	7.07		
Conductivity (mS/cm)		0.36		
Temperature (C)		7.35		
ORP (mV)		190		
Discolused Overson (marth)		0.07	·	

6.67

Note: Please see notes provided at the end of this table.

Dissolved Oxygen (mg/L)

Table 3-2 AW-13 Summary of Detected Compounds Former Onalaska Landfill

Volatile Organic	12/12/2002	Duplicate 12/12/2002	4/22/2003	DAL	ES
Compounds (VOC), ug/L	12/12/2002	1.8		PAL	
1,2,4-Trimethylbenzene			860	96	480
1,3,5-Trimethylbenzene	< 0.4	1.1	32	96	480
Acetone	2.5	5.9	< 24	200	1000
Methylene chloride	3.6	3.6	< 6.4	0.5	5
Xylenes (total)	< 0.44	< 0.44	10	1,000	10,000
Metals, mg/L					
Arsenic	0.0033	< 0.0021	0.0048	0.005	0.05
Barium	0.28	0.27	0.2	0.4	2
Cadmium	< 0.00028	< 0.00028	0.00034	0.0005	0.005
Cobalt	0.0043	0.0044	< 0.00074	0.008	0.04
Iron	4.7	5.1	34.8	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0016	0.0015	0.015
Manganese	24.3	23.7	11.4	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00067	0.006	0.03
Dissolved Gases, ug/L					
Ethane	< 1.5	< 0.6	< 3		
Ethene	< 1.4	< 0.58	< 2.9		
Methane	300	340	2200		
Natural Attenuation Parameters, mg/L					
Chloride	2.6	2.3	6.7	125	250
Nitrate as N	0.2	0.28	0.01	2	10
Sulfate	3.1	2.7	0.49	125	250
Total Alkalinity	550	550	260		
Total Organic Carbon	5	4	5		400 000 000
рН			7.08		
Conductivity (mS/cm)			0.585		
Temperature (C)			8.78		
ORP (mV)		AND 100	87		
Dissolved Oxygen (mg/L)			0.32		

Table 3-2
AW-20
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic			Duplicate		
Compounds (VOC), ug/L	12/12/2002	4/22/2003	4/23/03	PAL	ES
1,2,4-Trimethylbenzene	22	450	450	96	480
1,3,5-Trimethylbenzene	17	200	190	96	480
Acetone	3.6	< 17	< 17	200	1000
Methylene chloride	3.4	< 4.5	< 4.5	0.5	5
Naphthalene	0.64	8.2	8.9	8	40
Xylenes (total)	1.1	30	28	1,000	10,000
Metals, mg/L					
Arsenic	0.0088	< 0.0021	< 0.0021	0.005	0.05
Barium	0.29	0.13	0.23	0.4	2
Cadmium	0.00037	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	0.011	< 0.00074	0.01	0.008	0.04
Iron	23.3	0.39	5.4	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0016	0.0015	0.015
Manganese	17	0.7	11.8	0.025	0.05
Mercury	0.000087	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00067	0.006	0.03
Dissolved Gases, ug/L					
Ethane	< 3	< 3	< 3		
Ethene	< 2.9	< 2.9	< 2.9		
Methane	1600	690	830		a
Natural Attenuation Parameters, mg/L					
Chloride	1.8	5.6	7.1	125	250
Nitrate as N	< 0.0076	0.83	1.9	2	10
Sulfate	1.1	6.2	3.9	125	250
Total Alkalinity	600	210	400		
Total Organic Carbon	15	2	10		
рН		6.98	6.98		
Conductivity (mS/cm)		0.445	0.445		
Temperature (C)		7.61	7.61		
ORP (mV)		147	147		
Dissolved Oxygen (mg/L)		0.23	0.23		

Table 3-2 AW-25 **Summary of Detected Compounds** Former Onalaska Landfill

Volatile Organic			
Compounds (VOC), ug/L	12/12/2002	4/22/2003	PAL
1,2,4-Trimethylbenzene	240	52	(

volatile Organic				
Compounds (VOC), ug/L	12/12/2002	4/22/2003	PAL	ES
1,2,4-Trimethylbenzene	240	52	96	480
1,3,5-Trimethylbenzene	38	9.1	96	480
Methylene chloride	5.1	< 0.72	0.5	5
Naphthalene	4.5	< 1	8	40
Xylenes (total)	5.6	2.9	1,000	10,000

Metals, mg/L

motaro, mgr.				
Arsenic	0.0034	< 0.0021	0.005	0.05
Barium	0,43	0.23	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	0.0049	0.0021	0.008	0.04
Iron	13.8	3.6	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	6.6	2.3	0.025	0.05
Mercury	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 3	< 3	 
Ethene	< 2.9	< 2.9	 
Methane	570	1400	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride		15.2	125	250
Nitrate as N	0.97	2.2	2	10
Sulfate	4.4	1.9	125	250
Total Alkalinity	520	320		
Total Organic Carbon	7	6		

рН	 7.02	 T
Conductivity (mS/cm)	 0.644	 
Temperature (C)	 7.67	 
ORP (mV)	 156	 
Dissolved Oxygen (mg/L)	 0.88	 

# Table 3-2 AW-28 Summary of Detected Compounds Former Onalaska Landfill

<b>Volatile Organic</b>	Vo	latile	Orga	nic
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Compounds (VOC), ug/L	12/12/2002	4/22/2003	PAL	ES
1,2,4-Trimethylbenzene	45	44	96	480
1,3,5-Trimethylbenzene	21	18	96	480
Acetone	5.4	< 2.2	200	1000
Methylene chloride	4.6	< 0.58	0.5	5
Toluene	0.83	< 0.78	200	1,000
Xylenes (total)	2.9	1.6	1,000	10,000
Metals, mg/L				
Arsenic	0.0026	< 0.0021	0.005	0.05
Barium	0.26	0.22	0.4	2.
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	0.0064	0.0036	0.008	0.04
Iron	9.8	3.7	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	5	2.4	0.025	0.05
Mercury	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03
Dissolved Gases, ug/L	< 3	< 3	· ·	
Ethene	< 2.9	< 2.9		~~~
Methane	1200	1700		
Methane	1200	1700		
Natural Attenuation				
Parameters, mg/L				
Chloride	10.8	14	125	250
Nitrate as N	1.1	1.7	2	10
Sulfate	1.4	2.7	125	250
Total Alkalinity	370	360		
Total Organic Carbon	9	11		
рН		7.02		
Conductivity (mS/cm)		0.709		
Temperature (C)		8.35		
ORP (mV)	an de de	166		
Dissolved Oxygen (mg/L)		1.36		
Dissolved Oxygen (mg/L)		1.00	l	

# Table 3-2 MW-1S Summary of Detected Compounds Former Onalaska Landfill

Vo	latile	Org	anic
		, 0.9	41110

Compounds (VOC), ug/L		12/11/2002	4/22/2003	PAL	ES
2-Butanone		< 0.59	0.82		****
Acetone	7	3.7	< 1.1	200	1000
Methylene chloride		2.4	0.37	0.5	5

Metals, mg/L

0.0029	< 0.0021	0.005	0.05
0.034	0.039	0.4	2
< 0.00028	< 0.00028	0.0005	0.005
< 0.00074	< 0.00074	0.008	0.04
0,15	0.12	0.15	0.3
< 0.0016	< 0.0016	0.0015	0.015
0.86	0.76	0.025	0.05
< 0.000087	< 0.000087	0.0002	0.002
0.00088	0.0012	0.006	0.03
	0.034 < 0.00028 < 0.00074 0.15 < 0.0016 0.86 < 0.000087	0.034         0.039           < 0.00028	0.034         0.039         0.4           < 0.00028

Dissolved Gases, ug/L

Ethane	< 0.3	< 0.3	 
Ethene	< 0.29	< 0.29	 
Methane	18	150	 

# Natural Attenuation

Parameters, mg/L

· aramotoro, mg, =				
Chloride	5.5	7.3	125	250
Nitrate as N	< 0.0076	0.14	2	10
Sulfate	19.7	12.9	125	250
Total Alkalinity	120	140		
Total Organic Carbon	4	3		

рН	7.11	7.17	 
Conductivity (mS/cm)	0.3	0.325	 
Temperature (C)	11.2	8.38	 
ORP (mV)	157	137	 
Dissolved Oxygen (mg/L)	6.39	5.66	 

# Table 3-2 MW-1M Summary of Detected Compounds Former Onalaska Landfill

Volatile	Organic
----------	---------

Compounds (VOC), ug/L	12/11/2002	4/22/2003	PAL	ES
Acetone	3.4	< 1.1	200	1000
Methylene chloride	2.4	0.32	0.5	5

Metals, mg/L

motato, mg/m				
Arsenic	0.014	0.01	0.005	0.05
Barium	0.32	0.33	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	0.008	0.04
Iron	8.7	7.7	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	1.7	1.6	0.025	0.05
Mercury	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.3	< 0.3	 
Ethene	< 0.29	< 0.29	 
Methane	9.9	89	 

#### **Natural Attenuation**

Parameters, mg/L

race in the contract of the co		r	10-	
Chloride	7.8	8.1	125	250
Nitrate as N	< 0.0076	< 0.0076	2	10
Sulfate	5.2	5.7	125	250
Total Alkalinity	76	72		
Total Organic Carbon	4	3		

рН	6.75	7.08	 
Conductivity (mS/cm)	0.209	0.215	 
Temperature (C)	9.61	9.42	 
ORP (mV)	86	105	 
Dissolved Oxygen (mg/L)	0.35	0.43	 

### Table 3-2 MW-2S Summary of Detected Compounds Former Onalaska Landfill

Volatile (	Drganic
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Compounds (VOC), ug/L	12/11/2002	4/22/2003	PAL	ES
Acetone	3.8	< 1.1	200	1000
Benzene	0.91	0.45	0.5	5
Chlorobenzene	19	1.5		
Methylene chloride	2.8	< 0.29	0.5	5

Metals, mg/L

·····				
Arsenic	0.012	0.012	0.005	0.05
Barium	0.17	0.14	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	0.008	0.0013	0.008	0.04
Iron	29.5	29.3	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	1.9	2.8	0.025	0.05
Mercury	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	0.00084	0.002	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 1.5	< 1.5	 
Ethene	< 1.4	< 1.4	 
Methane	520	540	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	26.1	18.4	125	250
Nitrate as N	< 0.0076	0.01	2	10
Sulfate	< 0.11	0.22	125	250
Total Alkalinity	180	170		
Total Organic Carbon	6	4		

pH	6.47	6.74	 
Conductivity (mS/cm)	0.563	0.476	 
Temperature (C)	10.65	11.36	 
ORP (mV)	133	96	 
Dissolved Oxygen (mg/L)	3.35	0.9	 

# Table 3-2 MW-2M Summary of Detected Compounds Former Onalaska Landfill

Volatile	<b>Organic</b>
----------	----------------

Compounds (VOC), ug/L	12/11/2002	4/22/2003	PAL	ES
Acetone	5.5	< 1.1	200	1000
Methylene chloride	3.1	< 0.29	0.5	5

Metals, mg/L

Arsenic	0.019	0.019	0.005	0.05
Barium	0.37	0.66	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	0.008	0.04
Iron	5	9.6	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	0.41	0.64	0.025	0.05
Mercury	0.000092	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.3	< 0.6	 
Ethene	< 0.29	< 0.58	 
Methane	22	310	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	4.8	16	125	250
Nitrate as N	< 0.0076	< 0.0076	2	10
Sulfate	0.13	< 0.11	125	250
Total Alkalinity	100	160		
Total Organic Carbon	4	4		

рН	6.98	7.26	 
Conductivity (mS/cm)	0.231	0.391	 
Temperature (C)	10.01	10.61	 
ORP (mV)	107	89	 
Dissolved Oxygen (mg/L)	0.41	1.11	 

# Table 3-2 MW-4S Summary of Detected Compounds Former Onalaska Landfill

Volatile Organic		Duplicate			
Compounds (VOC), ug/L	12/12/2002	12/12/2002	4/22/2003	PAL	ES
1,2,4-Trimethylbenzene	540	570	780	96	480
1,3,5-Trimethylbenzene	120	130	170	96	480
Ethylbenzene	10	< 10	16	140	700
Naphthalene	< 10	< 10	14	8	40
Xylenes (total)	29	27	54	1,000	10,000
Metals, mg/L					
Arsenic	0,0089	0.009	0.0065	0.005	0.05
Barium	0.3	0.32	0.26	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	< 0.00074	0.008	0.04
Iron	16.9	17.2	15.4	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0016	0.0015	0.015
Manganese	2.1	2.1	1.8	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00067	0.006	0.03
Dissolved Gases, ug/L					
Ethane	< 3	< 3	< 3		
Ethene	< 2.9	< 2.9	< 2.9		
Methane	1200	750	1700		
Natural Attenuation					
Parameters, mg/L					
Chloride	13.5	13.5	10.2	125	250
Nitrate as N	< 0.0076	< 0.0076	< 0.0076	2	10
Sulfate	0.98	0.92	0.22	125	250
Total Alkalinity	280	280	260		
Total Organic Carbon	5	6	5		
pH	6.66	7.15	<b>4</b> 1 44	]	
Conductivity (mS/cm)	0.612	0.543			
Temperature (C)	12.02	10.15			
<u> </u>		<del> </del>	<del> </del>	1	

117

4.49

132

0.58

Note: Please see notes provided at the end of this table.

ORP (mV)

Dissolved Oxygen (mg/L)

Table 3-2 MW-5S Summary of Detected Compounds Former Onalaska Landfill

Volatile Organic
------------------

Compounds (VOC), ug/L	12/12/2002	4/22/2003	PAL	ES
1,2,4-Trimethylbenzene	210	180	96	480
1,3,5-Trimethylbenzene	47	38	96	480
Ethylbenzene	6.2	5.1	140	700
Methylene chloride	3,9	< 1.7	0.5	5
Naphthalene	6.2	5.4	8	40
Xylenes (total)	12	13	1,000	10,000

Metals, mg/L

motaro, mg. =				
Arsenic	0.0098	0.011	0.005	0.05
Barium	0.18	0.28	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	0.0025	0.0041	0.008	0.04
Iron	10.2	19.4	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	1.6	2	0.025	0.05
Mercury	0.000088	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 3	< 0.3	 
Ethene	< 2.9	< 0.29	 
Methane	130	230	 

# **Natural Attenuation**

Parameters, mg/L

Chloride	5.8	5.7	125	250
Nitrate as N	0.1	0.62	2	10
Sulfate	0.34	3.3	125	250
Total Alkalinity	140	160		
Total Organic Carbon	5	4		

pH	6.99	7.12	 
Conductivity (mS/cm)	0.333	0.379	 
Temperature (C)	12.4	9.66	 *** *** ***
ORP (mV)	106	117	 
Dissolved Oxygen (mg/L)	1.75	0.74	 

# Table 3-2 MW-6S Summary of Detected Compounds Former Onalaska Landfill

\/ <b>-</b>	1-4:1-	· ^	
VO	ıatın	e Org	anic

Compounds (VOC), ug/L	12/12/2002	PAL	ES
1,1-Dichloroethane	0.55	85	850
Acetone	2.6	200	1000
Methylene chloride	2.2	0.5	5

Metals, mg/L

< 0.0021	0.005	0.05
0.17	0.4	2
< 0.00028	0.0005	0.005
0.0022	0.008	0.04
0.065	0.15	0.3
< 0.0016	0.0015	0.015
2,7	0.025	0.05
< 0.000087	0.0002	0.002
< 0.00067	0.006	0.03
	0.17 < 0.00028 0.0022 0.065 < 0.0016 2.7 < 0.000087	0.17         0.4           < 0.00028

Dissolved Gases, ug/L

Ethane	< 0.3	No on our	
Ethene	< 0.29		
Methane	2.9		

#### **Natural Attenuation**

Parameters, mg/L

Chloride	6.7	125	250
Nitrate as N	< 0.0076	2	10
Sulfate	4	125	250
Total Alkalinity	160		
Total Organic Carbon	6		

рН	7.45	 
Conductivity (mS/cm)	0.342	 
Temperature (C)	11.1	 
ORP (mV)	113	 
Dissolved Oxygen (mg/L)	2.86	 

# Table 3-2 MW-6M Summary of Detected Compounds Former Onalaska Landfill

Volatile O	rganic
------------	--------

Compounds (VOC), ug/L	12/12/2002	PAL	ES
Acetone	2.1	200	1000
Methylene chloride	2.1	0.5	5

Metals, mg/L

motals, mg/L			
Arsenic	0.0024	0.005	0.05
Barium	0.75	0.4	2
Cadmium	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	0.008	0.04
Iron	< 0.042	0.15	0.3
Lead	< 0.0016	0.0015	0.015
Manganese	1.7	0.025	0.05
Mercury	0.000097	0.0002	0.002
Vanadium	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.3	 
Ethene	< 0.29	 
Methane	1.1	 

### **Natural Attenuation**

Parameters, mg/L

Chloride	6	125	250
Nitrate as N	< 0.0076	2	10
Sulfate	0.42	125	250
Total Alkalinity	100		
Total Organic Carbon	4		

pH	7.49	 
Conductivity (mS/cm)	0.227	 
Temperature (C)	10.5	 
ORP (mV)	96	 
Dissolved Oxygen (mg/L)	0.42	 

Table 3-2
MW-8S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Org	ianic
--------------	-------

Compounds (VOC), ug/L	12/11/2002	PAL	ES
Acetone	2.2	200	1000
Methylene chloride	2.6	0.5	5

Metals, mg/L

metais, mg/L			
Arsenic	< 0.0021	0.005	0.05
Barium	0.088	0.4	2
Cadmium	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	0.008	0.04
Iron	0.052	0.15	0.3
Lead	< 0.0016	0.0015	0.015
Manganese	0.59	0.025	0.05
Mercury	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.3	 
Ethene	< 0.29	 
Methane	0.58	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	9.5	125	250
Nitrate as N	1.5	2	10
Sulfate	12.3	125	250
Total Alkalinity	190		
Total Organic Carbon	0.9		

pH	7.32	 
Conductivity (mS/cm)	0.44	 
Temperature (C)	11.73	 
ORP (mV)	124	 
Dissolved Oxygen (mg/L)	7.07	 

Table 3-2 MW-8M Summary of Detected Compounds Former Onalaska Landfill

Vo	ola	tile	Orc	anic
	, . w		919	,

Compounds (VOC), ug/L	12/11/2002	PAL	ES
Acetone	2.9	200	1000
Methylene chloride	3.2	0.5	5

Metals, mg/L

< 0.0021	0.005	0.05
0.68	0.4	2
< 0.00028	0.0005	0.005
< 0.00074	0.008	0.04
< 0.042	0.15	0.3
< 0.0016	0.0015	0.015
2.7	0.025	0.05
0.00009	0.0002	0.002
< 0.00067	0.006	0.03
	0.68 < 0.00028 < 0.00074 < 0.042 < 0.0016 2.7 0.00009	0.68

Dissolved Gases, ug/L

Ethane	< 0.3	 
Ethene	< 0.29	 
Methane	2	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	2.6	125	250
Nitrate as N	< 0.0076	2	10
Sulfate	5.7	125	250
Total Alkalinity	220		
Total Organic Carbon	2		

рН	7.41	 
Conductivity (mS/cm)	0.422	 
Temperature (C)	9.95	 
ORP (mV)	105	 
Dissolved Oxygen (mg/L)	1.74	 

### Table 3-2

#### MW-12S

#### Summary of Detected Compounds Former Onalaska Landfill

		ganic

Compounds (VOC), ug/L	12/11/02	PAL	ES	
Acetone	3	200	1000	
Methylene chloride	2.7	0.5	5	

Metals, mg/L

Arsenic	< 0.0021	0.005	0.05
Barium	0.021	0.4	2
Cadmium	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	0.008	0.04
Iron	< 0.042	0.15	0.3
Lead	0.0034	0.0015	0.015
Manganese	0.0023	0.025	0.05
Mercury	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.3	 ***
Ethene	< 0.29	 
Methane	< 0.39	 

#### **Natural Attenuation**

#### Parameters, mg/L

Chloride	24.3	125	250
Nitrate as N	1.6	2	10
Sulfate	7.2	125	250
Total Alkalinity	170		
Total Organic Carbon	1		

pH *	7.29	 
Conductivity (mS/cm)	0.444	 
Temperature (C)	12.04	 
ORP (mV)	132	 
Dissolved Oxygen (mg/L)	5.86	 

Table 3-2 MW-14S Summary of Detected Compounds Former Onalaska Landfill

Volatile Organic
------------------

Compounds (VOC), ug/L	12/12/2002	4/23/2003	PAL	ES
1,2,4-Trimethylbenzene	1.7	0.97	96	480
1,3,5-Trimethylbenzene	0.64	< 0.4	96	480
Acetone	4.3	< 1.1	200	1000
Methylene chloride	2.1	< 0.29	0.5	5
Naphthalene	5	2.2	8	40
Xylenes (total)	1.4	0.47	1,000	10,000

Metals, mg/L

metais, mg/L				
Arsenic	< 0.0021	< 0.0021	0.005	0.05
Barium	0.18	0.084	0.4	2
Cadmium	0.00045	< 0.00028	0.0005	0.005
Cobalt	0.0052	0.0015	0.008	0.04
Iron	11.6	2.5	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	3.7	0.83	0.025	0.05
Mercury	0.000088	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 3	< 0.6	 
Ethene	< 2.9	< 0.58	 
Methane	450	430	 

## Natural Attenuation

Parameters, mg/L

Chloride	5	5.4	125	250
Nitrate as N	0.01	0.34	2	10
Sulfate	3	5.4	125	250
Total Alkalinity	210	150		
Total Organic Carbon	14	5		

pН	6.88	6.96	 
Conductivity (mS/cm)	0.441	0.328	 
Temperature (C)	11.13	7.7	 
ORP (mV)	114	166	 
Dissolved Oxygen (mg/L)	3.22	5.02	 

Table 3-2 MW-15M Summary of Detected Compounds Former Onalaska Landfill

Vc	lati	le (	Ora	anic

Compounds (VOC), ug/L	12/12/2002	PAL	ES
1,1-Dichloroethane	1	85	850
cis-1,2-Dichloroethene	0.56	7	70
Methylene chloride	3	0.5	5

Metals, mg/L

Arsenic	0.0054	0.005	0.05
Barium	0.86	0.4	2
Cadmium	0.00031	0.0005	0.005
Cobalt	0.0012	0.008	0.04
Iron	1.1	0.15	0.3
Lead	0.0049	0.0015	0.015
Manganese	3.6	0.025	0.05
Mercury	0.000092	0.0002	0.002
Vanadium	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.3	 
Ethene	< 0.29	 
Methane	e. 12	 

### **Natural Attenuation**

Parameters, mg/L

. a.a,g. =			
Chloride	5.2	125	250
Nitrate as N	0.03	2	10
Sulfate	2.4	125	250
Total Alkalinity	240		
Total Organic Carbon	3		

рН	7.25	 
Conductivity (mS/cm)	0.466	 
Temperature (C)	10.65	 
ORP (mV)	93	 
Dissolved Oxygen (mg/L)	0.51	 

# Table 3-2 PZ-1 Summary of Detected Compounds Former Onalaska Landfill

Volatile Organic			Duplicate		
Compounds (VOC), ug/L	12/12/2002	4/23/2003	4/23/03	PAL	ES
Methylene chloride	3,4	< 0.29	< 0.29	0.5	5
Metals, mg/L					
Arsenic	0.0029	< 0.0021	< 0.0021	0.005	0.05
Barium	0.024	0.031	0.031	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	< 0.00074	0.008	0.04
Iron	< 0.042	< 0.042	< 0.042	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0016	0.0015	0.015
Manganese	0.19	0.3	0.29	0.025	0.05
Mercury	0.000091	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	0.0013	0.0011	0.0012	0.006	0.03
Dissolved Gases, ug/L Ethane	< 0.3	< 0.3	< 0.3		
Ethene	< 0.29	< 0.29	< 0.29		
Methane	6.6	1.5	1.9		
Natural Attenuation Parameters, mg/L					
Chloride	9.4	12.8	13	125	250
Nitrate as N	0.23	0.23	0.23	2	10
Sulfate	1.6	5.5	5.4	125	250
Total Alkalinity	120	130	140		
Total Organic Carbon	3	< 0.7	2		
	7.54	7.40	<b>1</b>	T	
pH	7.54				
Conductivity (mS/cm)	0.271	0.314			
Temperature (C)	11.33				****
ORP (mV)	105				
Dissolved Oxygen (mg/L)	2.78	4.8			

#### Table 3-2 PZ-2

# Summary of Detected Compounds Former Onalaska Landfill

Volatile Organ	1ic
----------------	-----

Compounds (VOC), ug/L	12/11/2002	PAL	ES
Acetone	2.6	200	1000
Methylene chloride	2,4	0.5	5

Metals, mg/L

Arsenic	0.056	0.005	0.05
Barium	0.66	0.4	2
Cadmium	< 0.00028	0.0005	0.005
Cobalt	0.011	0.008	0.04
Iron	98.8	0.15	0.3
Lead	0.0062	0.0015	0.015
Manganese	5,2	0.025	0.05
Mercury	0.00013	0.0002	0.002
Vanadium	0.026	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.6	 
Ethene	< 0.58	 
Methane	98	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	8.6	125	250
Nitrate as N	< 0.0076	2	10
Sulfate	2.4	125	250
Total Alkalinity	160		
Total Organic Carbon	15		

pH	6.68	 
Conductivity (mS/cm)	0.432	 
Temperature (C)	11.03	 
ORP (mV)	116	 
Dissolved Oxygen (mg/L)	5.14	 

## Table 3-2 PZ-3

#### Summary of Detected Compounds Former Onalaska Landfill

V	o	lati	le	Org	ıar	1ic
-	•				,∽.	

Compounds (VOC), ug/L	12/11/2002	PAL	ES
Acetone	3.1	200	1000
Methylene chloride	2.5	0.5	5

Metals, mg/L

Arsenic	0.0038	0.005	0.05
Barium	0.097	0.4	2
Cadmium	0.00099	0.0005	0.005
Cobalt	0.0018	0.008	0.04
Iron	1.2	0.15	0.3
Lead	< 0.0016	0.0015	0.015
Manganese	2.7	0.025	0.05
Mercury	0.00012	0.0002	0.002
Vanadium	0.0028	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.3	 
Ethene	< 0.29	 
Methane	2.4	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	6.3	125	250
Nitrate as N	< 0.0076	2	10
Sulfate	1.2	125	250
Total Alkalinity	160		
Total Organic Carbon			

рН	7.06	 
Conductivity (mS/cm)	0.33	 ****
Temperature (C)	10.98	 
ORP (mV)	133	 
Dissolved Oxygen (mg/L)	4.48	 

#### Table 3-2 PZ-4

# Summary of Detected Compounds Former Onalaska Landfill

Volatile C	Organic
------------	---------

Compounds (VOC), ug/L	12/12/2002	PAL	ES
Acetone	3.5	200	1000
Methylene chloride	2.6	0.5	5

Metals, mg/L

metals, mg/L			
Arsenic	< 0.0021	0.005	0.05
Barium	0.12	0.4	2
Cadmium	< 0.00028	0.0005	0.005
Cobalt	0.001	0.008	0.04
Iron	< 0.042	0.15	0.3
Lead	< 0.0016	0.0015	0.015
Manganese	2.6	0.025	0.05
Mercury	0.000088	0.0002	0.002
Vanadium	< 0.00067	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.3	 
Ethene	< 0.29	 
Methane	< 0.39	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	5.5	125	250
Nitrate as N	< 0.0076	2	10
Sulfate	4.2	125	250
Total Alkalinity	130		
Total Organic Carbon	5		

pH	7.53	 
Conductivity (mS/cm)	0.278	 
Temperature (C)	11.80	 
ORP (mV)	105	 40 PM 04
Dissolved Oxygen (mg/L)	12	 

Table 3-2
PZ-5
Summary of Detected Compounds
Former Onalaska Landfill

Volatile	Organic
----------	---------

Compounds (VOC), ug/L	12/12/2002	4/23/2003	PAL	ES
Acetone	3	< 1.1	200	1000
Methylene chloride	2.5	0.34	0.5	5

Metals, mg/L

motais, mg/L				
Arsenic	< 0.0021	< 0.0021	0.005	0.05
Barium	0.091	0.075	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	0.008	0.04
Iron	0.13	0.12	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	0.18	0.17	0.025	0.05
Mercury	0.000098	< 0.000087	0.0002	0.002
Vanadium	0.0011	0.00075	0.006	0.03

Dissolved Gases, ug/L

Ethane	< 0.6	< 0.3	 
Ethene	< 0.58	< 0.29	 
Methane	130	210	 

#### **Natural Attenuation**

Parameters, mg/L

Chloride	9.7	8.6	125	250
Nitrate as N	0.48	0.37	2	10
Sulfate	5.7	10.1	125	250
Total Alkalinity	260	220		
Total Organic Carbon	2	1		

pH	7.15	7.18	 
Conductivity (mS/cm)	0.529	0.469	 
Temperature (C)	10.98	8.72	 
ORP (mV)	112	159	 
Dissolved Oxygen (mg/L)	1.21	2.42	 

# Table 3-2 Ackerman Summary of Detected Compounds Former Onalaska Landfill

Volatile Organic			
Compounds (VOC), ug/L	4/22/2003	PAL	ES
	(No VOCs Detected	∍d)	
Metals, mg/L			
Arsenic	< 0.0021	0.005	0.05
Barium	0.024	0.4	2
Cadmium	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	0.008	0.04
Iron	5,9	0.15	0.3
Lead	0.0034	0.0015	0.015
Manganese	0.12	0.025	0.05
Mercury	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	0.006	0.03

# Table 3-2 Hubley Summary of Detected Compounds Former Onalaska Landfill

Volatile Organic			
Compounds (VOC), ug/L	4/22/2003	PAL	ES
	(No VOCs Detecte	∍d)	
Metals, mg/L			
Arsenic	< 0.0021	0.005	0.05
Barium	0.084	0.4	2
Cadmium	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	0.008	0.04
Iron	0.16	0.15	0.3
Lead	< 0.0016	0.0015	0.015
Manganese	0.2	0.025	0.05
Mercury	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	0.006	0.03

# Table 3-2 Notes Summary of Detected Compounds Former Onalaska Landfill

For the VOC only; the compounds reported are the only VOC that have been detected since the December 2002 sampling event

Shaded cells indicate the compound exceeds the WDNR Preventive Action Level (PAL)

Shaded cell and bold number indicates the compound exceeds the WDNR PAL and Enforcement Standard (ES)

The ES and PAL criteria for trimethylbenzene (TMB) is the sum of 1,2,4-TMB and 1,3,5-TMB

- < indicates the compound was not detected at or above the detection limit
- --- indicates no criteria associated with that compound

Ackerman and Hubley residential wells were sampled for VOC and metals

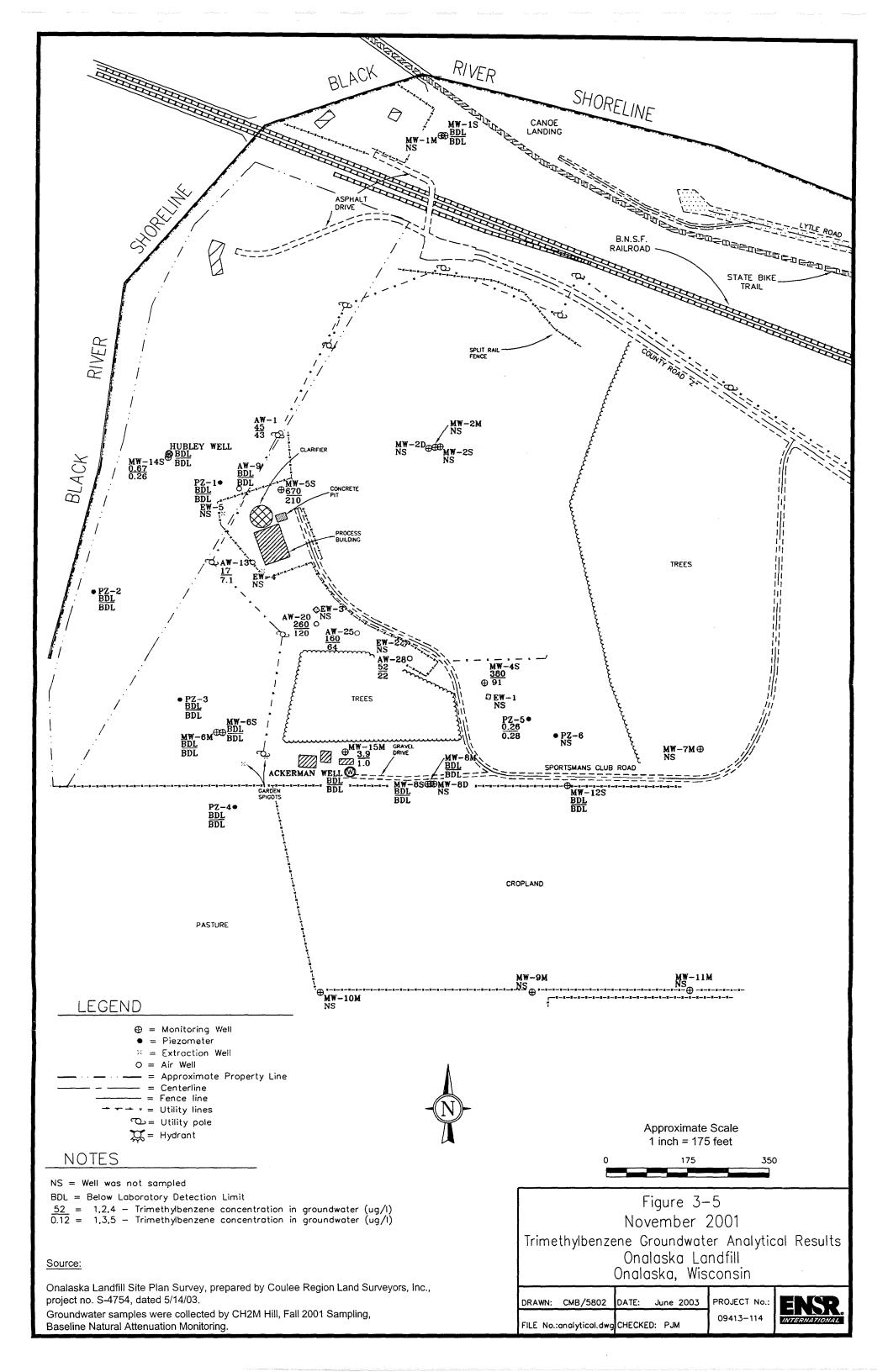


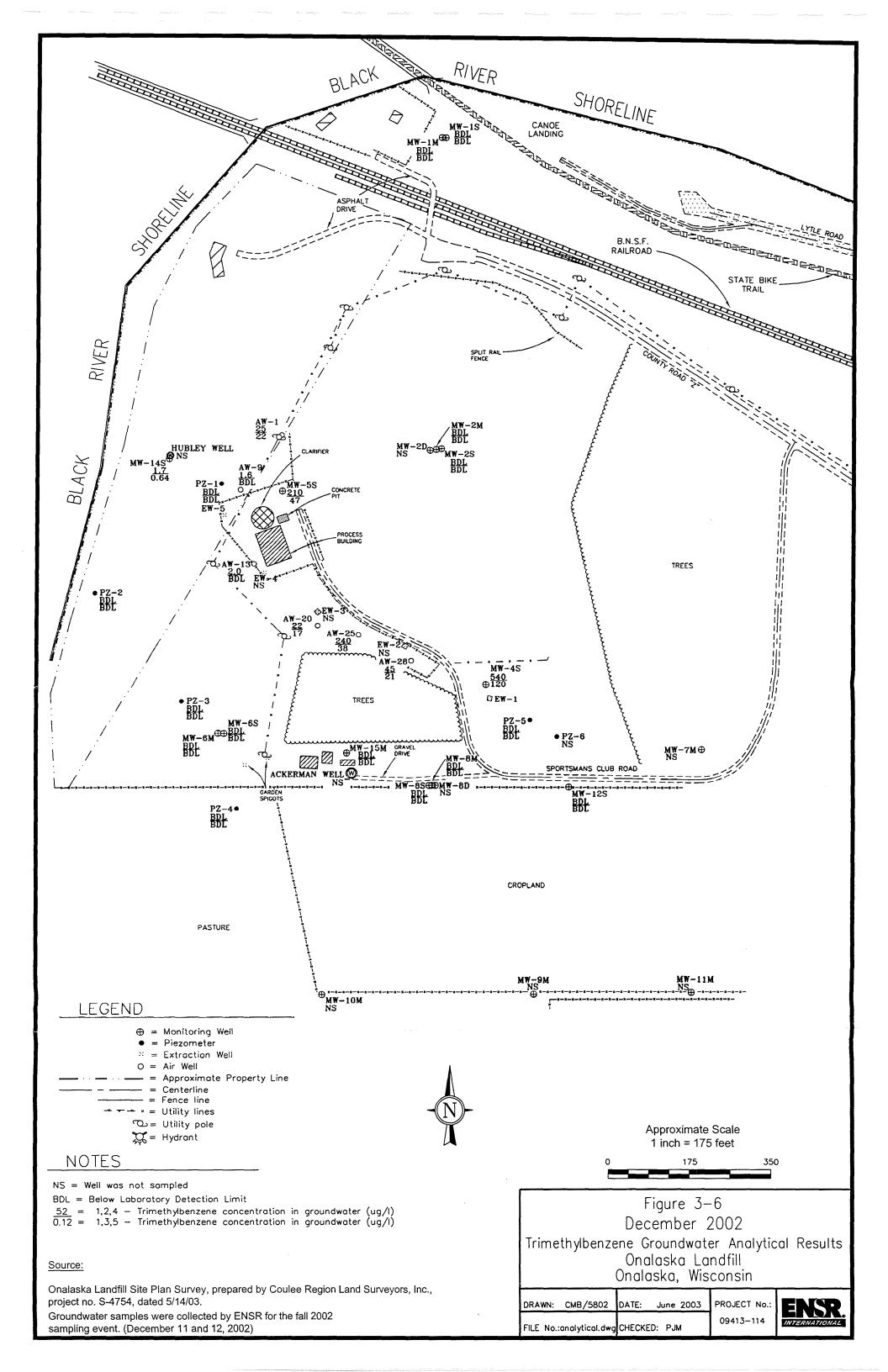
The following are the results from December 2002 and April 2003 sampling events.

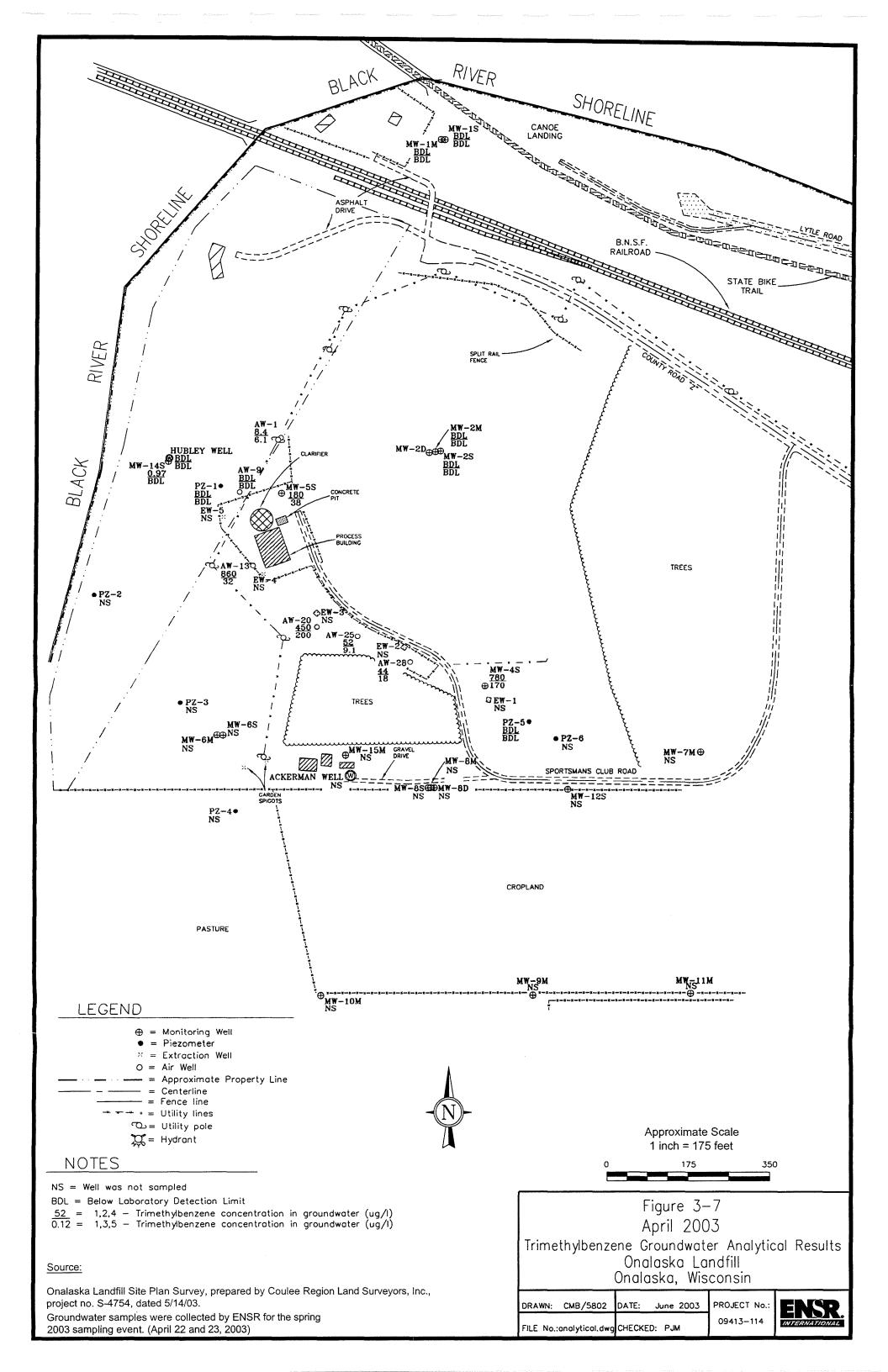
- No VOC were detected in the two residential wells (Ackerman and Hubley). In the
  Ackerman well, the concentration of iron and manganese exceeded the ES, and the
  concentration of lead exceeded the PAL. In the Hubley well, the concentration of
  manganese exceeded the ES and the iron exceeded the PAL.
- The most common VOC contaminants detected were the trimethylbenzenes (1,2,4 & 1,3,5), xylenes, acetone and methylene chloride. The concentrations of the trimethylbenzene for the baseline sampling event (November 2001) and the two most recent sampling events are depicted on Figures 3-5, 3-6, and 3-7, respectively. For the December 2002 sampling event, methylene chloride and acetone were found in most wells sampled and in Quality Assurance/Quality control samples (two trip blanks). It is inferred that the methylene chloride and acetone are laboratory artifacts.
- Methylene chloride and the trimethylbenzenes were the only VOCs that exceeded the WDNR Enforcement Standards (ES). Methylene chloride exceeded the ES in AW-25 and trimethylbenzene exceeded the ES in MW-4S, AW-13 and AW-20.
- Methylene chloride, naphthalene, benzene, and the trimethylbenzenes were the only VOCs that exceeded the PAL. The trimethylbenzenes exceeded the PAL in MW-4S, MW-5S, AW-13, AW-20, and AW-25. Benzene exceeded the PAL in MW-2S and naphthalene exceeded the PAL in MW-4S, and AW-20. Methylene chloride exceeded the PAL in 24 wells. No other PALs were exceeded.
- The Ackerman residential well is located downgradient of the Site. During the most recent sampling event (April 2003) the Ackerman well was tested. No VOCs were detected. Monitoring well MW-15M is located between the Site and Ackerman well. MW-15M was tested in December 2002. The PAL for methylene chloride was exceeded but can be attributed as a laboratory artifact. Two other VOCs were detected but are below the respective PAL.
- Of the 37 VOCs analyzed, only 13 VOCs were detected. The following is a list of detected VOCs.

1,2,4-Trimethylbenzene	Naphthalene	1,1-Dichloroethane
1,3,5-Trimethylbenzene	Toluene	cis-1,2-Dichloroethene
Acetone	Benzene	2-butanone
Methylene chloride	Chlorobenzene	
Xylenes (total)	Ethylbenzene	

- Concentrations of all of the nine metals tested were detected. Iron and manganese were
  the most prevalent metals detected. Concentrations of iron exceeded the ES in 15
  monitoring wells and manganese exceeded the ES in 24 monitoring wells. No other ES
  were exceeded for the metals.
- The PAL was exceeded for all metals tested except for mercury. The PAL for Manganese was exceeded in 24 wells and the PAL for iron was exceeded in 15 wells. Concentrations of arsenic exceeded the PAL in AW-20, MW-15M, MW-1M, MW-2M, MW-2S, MW-4S, MW-5S, and PZ-2. Concentrations of cobalt (AW-20) barium (MW-2M, AW-25, MW-15M, MW-2M, MW-6M, PZ-2), cadmium (PZ-3, AW-1), lead (MW-12S, MW-15M, PZ-2, Ackerman) and vanadium (PZ-2), exceeded the PAL in each respective well. No other PALs were exceeded.









**Table 3-3** below, provides a comparison of groundwater quality over time from three wells. Wells MW-5S and MW-4S were selected to evaluate water quality immediately downgradient of the landfill. MW-5S and MW-4S have historically been two of the most impacted wells. MW-6S was selected as a well that is located downgradient of the extraction system. All three of these monitoring wells were installed prior to activation of the groundwater extraction system. Data from three different eras (pre-pumping, pumping and post pumping) are included in **Table 3-3**. The VOCs listed in the table were identified during the RI as the predominant organic compounds of concern. The groundwater extraction system operated from June 1994 through November 2001.

Table 3-3 - Comparison of Concentrations of Certain VOCs in the Groundwater

Mall Nivershau	Sample	Concentra	ation in pp	b		
Well Number	Date	benzene	toluene	xylenes	1-1, DCA	TCE
MW-4S	10/31/93	0.93	54.64	317	5.71	0.13
	12/19/96	<0.3	7	371.4	<0.2	<1.0
	10/26/98	<8	<8	86	<8	<8
	11/1/01	<0.16	<0.18	30	<0.16	<0.14
	4/22/03	<11	<11	54	<8.6	<12
MW-5S	10/31/93	0.78	160	469	3.39	0.29
	12/18/96	0.7	490.5	174.9	0.3	<1.0
	10/26/98	<0.4	28	27	<0.4	<0.4
	11/02/01	<0.16	0.48	180	<0.16	0.14
	4/22/03	<2.1	<2.2	13	<1.7	<2.4
MW-6S	10/31/93	0.5	1.78	0.1	7.1	0.14
	10/2/96	<1	<1	<1	0.3	<1
	10/27/98	<0.4	<0.4	<0.4	<0.4	<0.4
	10/31/01	<0.16	<0.18	<0.33	0.33	0.16
TO THE REPORT OF THE PARTY OF T	12/12/03	<0.37	<0.39	<0.44	0.55	<0.42



#### 4.0 NATURAL ATTENUATION EVALUATION

This section discusses the analytical results for the MNA parameters for the samples collected during the December 2002 and April 2003 monitoring events. Also, presented below, is a discussion on the natural attenuation environment at the Site. Future MNA data will continue to look at natural attention indicators and will evaluate the trends in contaminants using a WDNR approved statistical model.

The results of the laboratory analyzed and field collected natural attenaution parameters from the December 2002 and April 2003 sampling events are summarized below and contained in **Table 3-2**. The field parameties reported in Table 3-2 were collected from the final purge volume. **Attachment A** contains the abbreviated analytical report. The complete analytical data packages for the sampling events are stored in ENSR's Minneapolis office.

Concentration isopleth drawings using data from the December 2002 and April 2003 sampling events were completed for sulfate (**Figure 4-1 and 4-2**) and methane (**Figure 4-3 and 4-4**) and are discussed below.

The field collected NA parameters included the following:

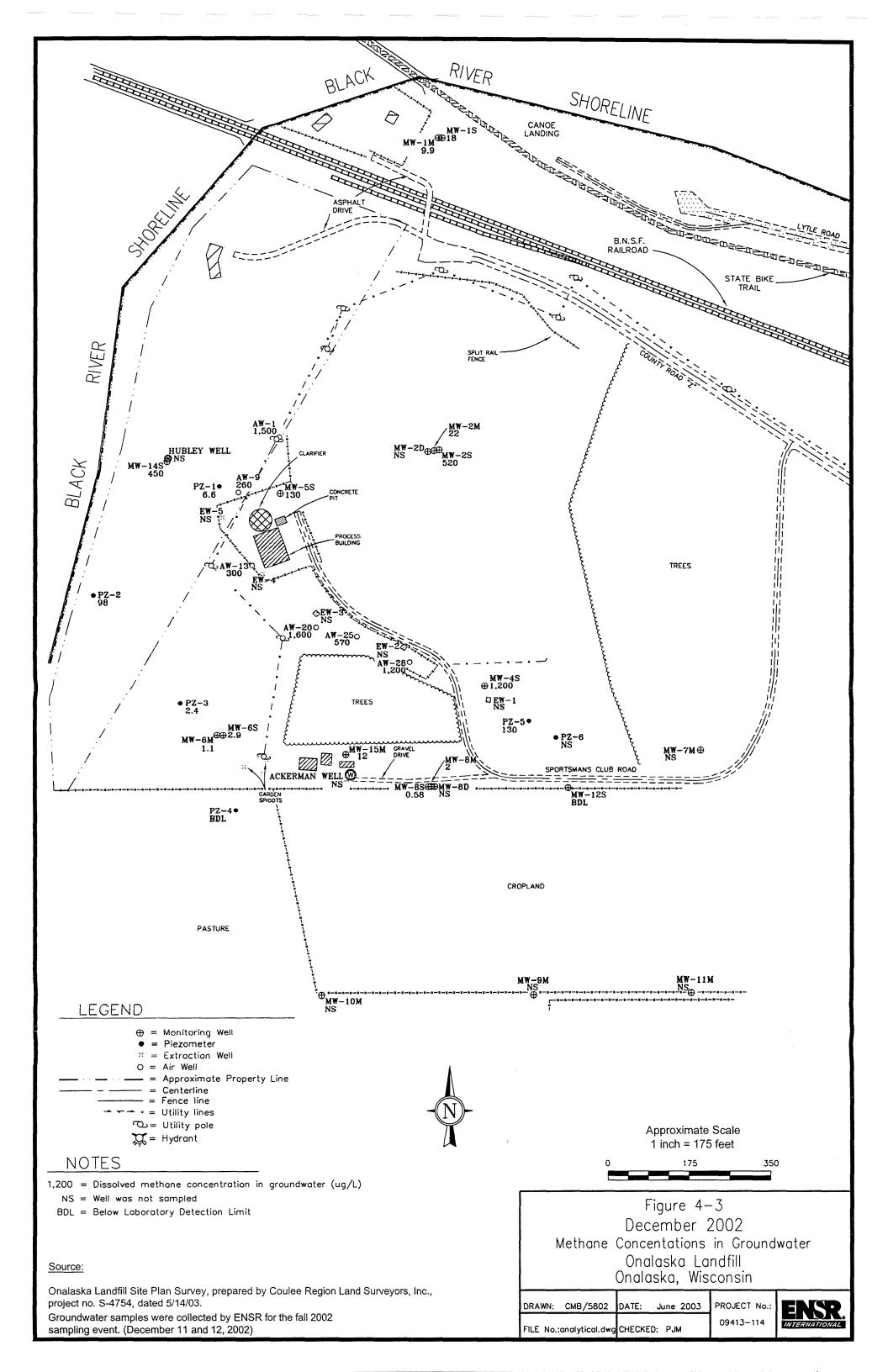
- Oxidation/Reduction Potential (ORP)
- Dissolved Oxygen (DO)
- Temperature
- pH
- Specific Conductance

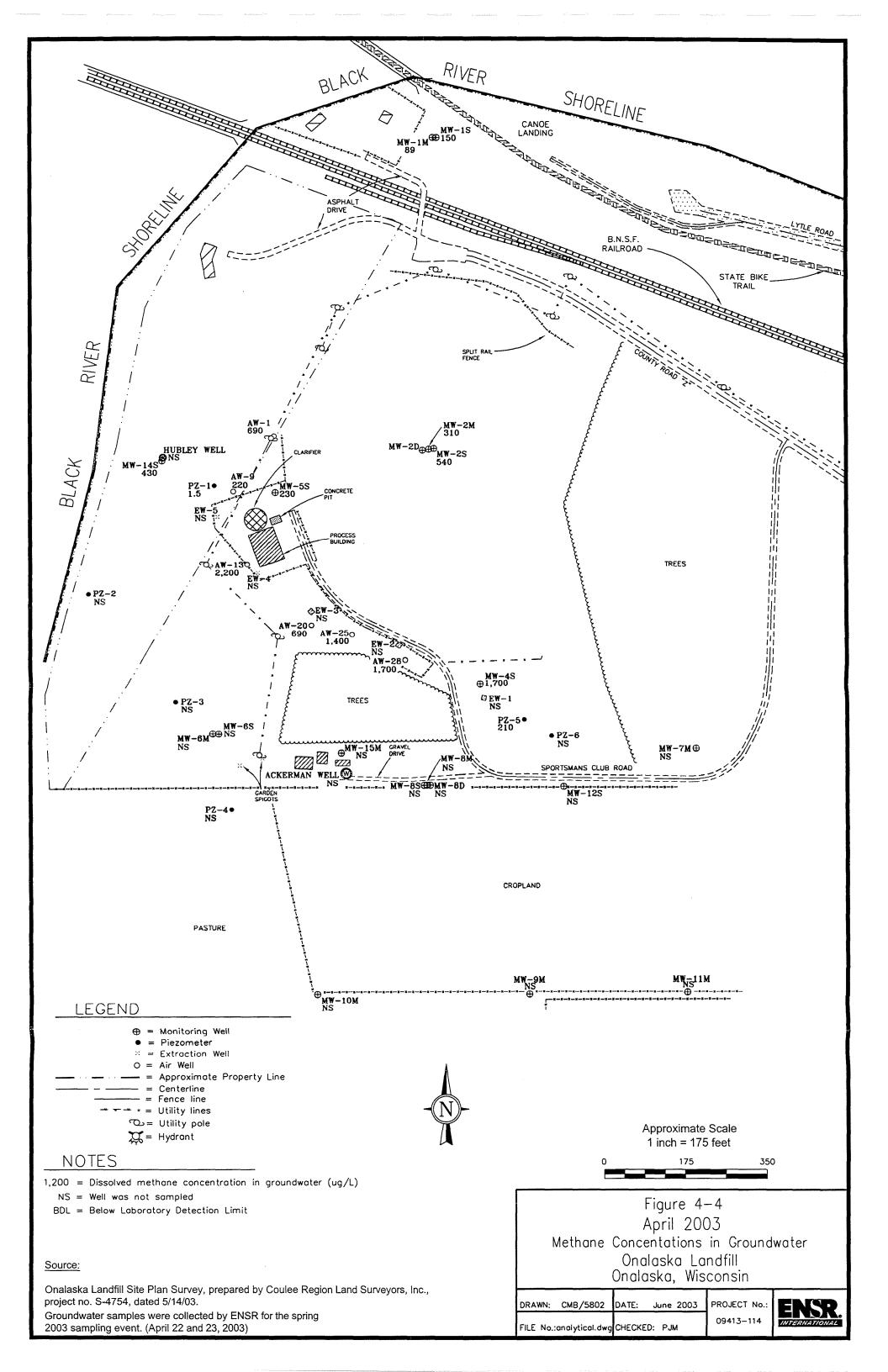
The laboratory analyzed NA parameters included the following:

- Total Organic Carbon (TOC)
- Nitrate
- Dissolved iron
- Sulfate
- Alkalinity
- Dissolved gases (methane, ethane, ethene)
- Chloride

The Following is a summary of findings from the NA monitoring:

- The ORP in the monitoring points ranged from 87mV to 190mV. An ORP value greater than 50mV indicate reductive dechlorination can occur. Future monitoring will evaluate the trends in ORP concentrations. A decreasing concentration of ORP in groundwater indicates an increase in biological activity.
- The DO in the monitoring points ranged from 0.23 mg/l to 7.07mg/l. Generally, DO concentrations less than 1 mg/l indicate anaerobic conditions and concentrations greater than 1 mg/l indicate aerobic conditions. It appears that groundwater at most monitoring points was in aerobic conditions. Anaerobic conditions were found in AW-13, AW-20, AW-25, MW-1M, MW-6M, and MW-15M. The DO concentrations exhibited both aerobic and anaerobic conditions between the December 2002 and April 2003 sampling events in MW-2S, MW-2M, MW-4S, and MW-5S.







- The pH, conductivity and temperature were collected to evaluate when stagnant water had been removed during the purging process.
- Ethane and Ethene was not detected in the groundwater. Ethane and ethene are degradation products of vinyl chloride. No vinyl chloride was detected in the groundwater, thus it is unlikely that ethane or ethene is present in the groundwater.
- Chloride can be used as a measure of degradation of CVOC. The chloride concentration in the monitoring point ranged from 1.8 to 16 mg/l. The PAL for chloride is 125 mg/l.
- Nitrate can be used as a terminal electron acceptor when oxygen is depleted. The
  concentrations of nitrate ranged from below detection limits to 2.2. The PAL for nitrate is 2
  mg/L and was exceeded in AW-25. No other wells exceeded the PAL for nitrate.
- Increasing concentrations of alkalinity reflects higher concentrations of calcium and magnesium, indicating that microbial respiration is releasing carbon dioxide into the groundwater. The concentrations of alkalinity at the Site ranged from 72 mg/L to 600 mg/L. Future results will be evaluated on a well by well basis to determine trends in alkalinity concentrations.
- Total Organic Carbon (TOC) can be used as a general measure of organics concentration, both natural and man made. The TOC at the Site ranged from 0.8 to 15 mg/L with most of the TOC concentrations around 5mg/L.
- Sulfate can be used as an electron acceptor once oxygen, nitrate, and iron have been reduced. The concentration of sulfate is expected to decrease with an increase in biological activity. The concentrations of sulfate in the groundwater for the December 2002 and April 2003 are illustrated on Figure 4-1 and Figure 4-2. The highest concentrations of sulfate were detected in the upgradient well MW-1S for both sampling events and were typically lower in wells with contaminants present.
- Higher concentrations of methane in the groundwater typically indicate methanogenesis is occurring. Thus higher methane concentrations may indicate that NA is occurring. The concentrations of methane in the groundwater for the December 2002 and April 2003 are illustrated on Figure 4-3 and Figure 4-4. The highest concentrations of methane were detected in the wells within the plume while wells outside the plume had substantially lower methane concentrations.



#### 5.0 DATA VALIDATION

Full validation was performed on the data for seven groundwater samples and one trip blank for the site-specific volatile organic compounds (VOCs) by SW-846 method 8260B, and for seven groundwater samples analyzed for selected tatal and dissolved metals by SW-846 methods 6010B and 7470A. The samples were collected at the Site on December 12, 2002 and submitted to Severn Trent Laboratory (STL) in North Canton, OH for analysis. STL processed and reported the samples under Lot # A2L140130.

The sample results were assessed according to the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (2/99) and the quality assurance project plan (QAPP). Modification of the Functional Guidelines was done to accommodate the non-CLP methodologies.

In general, the data appear to be valid as reported and may be used for decision making purposes.

Samples included in this review are listed below:

Sample ID	Sample ID
AW-13	AW-13 Dup (field duplicate of sample AW-13)
AW-28	AW-25
AW-20	AW-9
AW-1	TRIP(trip blank)

#### **5.1.1 VOC DATA VALIDATION**

Sample data were reviewed for the following parameters:

- Agreement of analyses conducted with the chain of custody requests
- Holding times/sample preservation
- Gas chromatography/mass spectrometry (GC/MS) tunes
- Initial and continuing calibrations
- Method blanks/trip blanks/field blank
- Surrogate spike recoveries
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results
- Matrix spike/matrix spike duplicate (MS/MSD) results
- Internal standard performance
- · Field duplicate results
- Quantitation limits and sample results



#### DISCUSSION

#### **Agreement of Analyses Conducted with Chain of Custody Requests**

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the chain-of-custody. There were no discrepancies noted with the following exceptions:

Custody seals were not used in the transportation of these samples. No validation action was taken on this basis other than this notation.

It should be noted that the laboratory reported additional compounds on the Form that was not part of the site-specific VOC list.

One vial of sample AW-20 for the VOC analysis was received with air bubbles greater than 6mm in diameter.

#### **Holding Times and Sample Preservation**

The samples were analyzed within the method specified holding time.

The cooler temperature was within the acceptable range of  $4^{\circ}$ C  $\pm$   $2^{\circ}$ C.

All samples were preserved at a pH <2.

#### **GC/MS Tunes**

The frequency and abundance of all bromofluorobenzene (BFB) tunes were within the Quality Control acceptance criteria. The samples were analyzed within the method specified tune times.

#### **Initial and Continuing Calibrations**

The percent relative standard deviations (%RSDs) or correlation coefficients, the response factors (RFs), and the percent differences (%Ds) of all compounds were within the QC acceptance limits in the initial and continuing calibration standards associated with these samples.

#### Method Blanks/Trip Blanks/Field Blank

Target analyses were not detected in the laboratory method blank.

A field blank was not submitted with this sample set since all sampling equipment used was either dedicated equipment of single use disposable equipment. No validation action was taken other than this notation.

Methylene chloride (1.9 $\mu$ g/L) was detected in sample TRIP. The presence of blank contamination indicates that false positives may exist for this analyte in the associated samples. It is recommended that any detected results for methylene chloride above 19 $\mu$ g/L in the associated samples be considered a false positive.

#### Surrogate Spike Recoveries

The surrogate percent recoveries were within the QC acceptance limits in all sample analyses.



#### **LCS/LCSD Results**

The surrogate percent recoveries and relative percent differences (RPDs) were within the laboratory's QC acceptance criteria in the Laboratory Control Samples/Laboratiry Control Sample Duplicate associated with all samples in this data set.

#### MS/MSD Results

Lab Matrix Spike/Matrix Spike Duplicate analyses were performed on a sample provided by another client for this data set. The surrogate percent recoveries and RPDs were all within the laboratory's QC acceptance criteria.

#### **Internal Standard Performance**

The internal standard performance was within the QC acceptance criteria in all sample analyses.

#### Field Duplicate Results

Samples AW-13 and AW-13 Dup were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair. The RPD for acetone exceeded the QC acceptance criteria. The RPD for 1,3,5-trimethylbenzene was not calculable (NC) due to a nondetect result in the sample but is acceptable since the detected result is < 5x the Standard Qualification Limit.

Since the precision for acetone did not meet the acceptance criteria, it may be appropriate to evaluate results for this analyte in other field duplicates.

#### **VOCs**

Compound	AW-13 (μg/L)	AW-13 Dup (μg/L)	RPD (%)	
Methylene chloride	3.6	3.6	0	
1,2,4- Trimethylbenzene	2.0	1.8	11	
Acetone	2.5	5.9	81	
1,3,5- Trimethylbenzene	1 U	1.1	NC	



#### **Quantitation Limits and Sample Results**

The following samples were analyzed as dilutions due to target analytes which would have exceeded the calibration range and may have produced inaccurate results. The laboratory elevated sample quantitation limits accordingly.

Sample	Dilution
AW-28	1.25x
AW-25	7.81x

#### **5.2.1 METALS DATA VALIDATION**

#### **REVIEW ELEMENTS**

Sample data were reviewed for the following parameters:

- Agreement of analyses conducted with chain-of-custody requests
- Holding times/sample preservation
- Calibrations
- Laboratory blanks/equipment blanks/field blanks
- Inductively coupled plasma (ICP) interference check sample (ICS) results
- Matrix spike/matrix spike duplicate (MS/MSD) results
- Laboratory duplicate results
- Field duplicate results
- Laboratory control sample (LCS) results
- Serial dilution results
- Sample quantitation/detection limit results

#### DISCUSSION

#### Agreement of Analyses Conducted with Client Chain of Cusody Requests

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the chain-of-custody. The following discrepancies were observed. No validation action was taken other than these notations.

Custody seals were not used in the transportation of these samples.

Sample preservation was not recorded on the Chain of Custody and the laboratory sample receiving checklist was not specific regarding the tests for which sample pHs were checked. It was not possible from either the Chain of Custody or the laboratory documentation to determine if samples submitted for laboratory filtration for dissolved metals were received unpreserved.

#### **Holding Times and Sample Preservation**

The samples were analyzed within the method specified holding time for metals, but it was not possible to determine when the filtration of unpreserved samples for dissolved metals was performed.

The cooler temperature was within the acceptable range of  $4^{\circ}C \pm 2^{\circ}C$ .

Sample AW-20 for total metals required additional preservation in the laboratory to meet the method recommended pH of <2. No validation action was taken other than this notation.



#### **Initial and Continuing Calibrations**

All criteria were met for the calibration curves and the initial and continuing calibration verification (ICV/CCV) standards for metals.

Although a Contract Required Detection Limit (CRDL) standard is not applicable to SW-846 methods, Severe Treat Laboratory chose to analyze a similar standard (CRI and CRA represent the CRDL Standard for Atomic Absorbtion Analysis (CRA) and for the ICP analysis (CRI)). An acceptance limit of 100 + 20% recovery (%R) was used to evaluate these standards. All CRI and CRA standards met the acceptance criteria with the following exceptions.

CRI/CRA	Analyte	%R	True Value (ug/L)	Affected samples
CRA	Mercury	123	0.20	All samples
CRI	Vanadium	75	7.0	All samples

While it is considered that there is no impact on the nondetect results for mercury, positive results less than 2x the CRA true value may be biased high and should therefore be considered as estimated. All samples in the data set were nondetect for vanadium. These nondetects may be biased low and therefore should be considered as estimated.

#### Laboratory Blanks/Equipment Blanks/Field Blanks

No equipment or field blanks were submitted with this sample set. No validation action was taken other than this notation.

Various analytes were detected in the laboratory preparation blanks and in the initial and continuing calibration blanks (ICBs and CCBs) associated with these samples. The presence of blank contamination indicates that false positive results or false negative results (for negative blanks) may exist for these analytes in the associated samples. An Action Level (AL) was established for each analyte at 5x the highest concentration detected in the blanks and should be considered for the evaluation of blank contamination in the sample data. The following table summarizes these ALs and the associated samples.

Blank Type	Element (Total and Dissolved)	Conc. Detected (μg/L)	AL (μg/L)
ICB/CCB 12/21/02	Barium	0.30	1.5
	Manganese	1.3	6.5
ICB/CCB 1/3/03	Arsenic	-3.1	-15.5
	Cadmium	+0.30/-0.20	+1.5/-1.0
	Vanadium	-1.3	-6.5
Associated sample	s: All samples analyzed fo	or total and dissolved m	etals

Results less than the absolute value of a negative blank AL should be considered biased low or potential false negatives. Results less than the value of a positive blank AL should be considered false positives.



#### **ICP ICS Results**

All criteria were met for the analysis of the ICS A and ICS AB solutions.

#### MS/MSD Results

MS/MSD analyses were performed on sample AW-13 for total and dissolved metals. All percent %Rs and relative percent differences (%RPDs) were within acceptable limits.

#### **Laboratory Duplicate Results**

Laboratory duplicate analyses were not performed. Precision in the laboratory was demonstrated by the MS/MSD analyses as discussed above.

#### Field Duplicate Results

Samples AW-13 and AW-13-DUP were submitted as the field duplicates with this sample set. The following tables summarize the RPDs of the detected total and dissolved analytes in the field duplicate pair, all of which met the QC acceptance criteria. Selected RPDs were reported as not calculable (NC) due to a nondetect value in either the sample or its duplicate. NC results were deemed acceptable since the detected value was less than five times the laboratory reporting limit.

	Total Metals						
Analytes	AW-13 (mg/L)	AW-13-DUP (mg/L)	RPD (%)				
Arsenic	0.0033	ND	NC				
Cobalt	0.0043	0.0044	2.3				
Iron	4.7	5.1	8.2				
Manganese	24.3	23.7	2.5				

	Dissolved Metals						
Analytes	AW-13 (mg/L)	AW-13-DUP (mg/L)	RPD (%)				
Cobalt	0.0045	0.0043	4.5				
Iron	ND	0.062	NC				
Manganese	21.1	22.1	46.5				

#### **LCS Results**

The %Rs of all spiked analytes met the QC acceptance criteria in the LCS analyses for total and dissolved metals.

#### **Serial Dilution Results**

The laboratory performed serial dilution analyses on sample AW-1 for total and dissolved metals. The percent differences (%Ds) for all analytes met the QC acceptance criteria of <10%. No validation action was taken on this basis.



#### **Quantitation Limits and Sample Results**

No dilutions were required for the samples in this data set analyzed for total and dissolved metals.

Result calculations were spot-checked; no discrepancies were noted.

Nondetect results were reported to the laboratory reporting limit. Based on the laboratory narrative it is believed that detected results were reported to the MDL, but the MDLs for the reported analytes are not included in the data package (only Instrument Detection Limits were provided). It was not possible to determine if the laboratory MDLs met the sensitivity requirements for the following metals for which the QAPP specified detection limits: lead (1.5 ug/L), arsenic (5 ug/L), and barium (20 ug/L).



#### 6.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based upon the December 2002 and April 2003 sampling events.

- Preliminary inspection of the natural attenuation data indicates that natural attenuation may be an effective modification to the ROD.
- The limited list of chemicals of concern from the ROD did not include the trimethylbenzenes (1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene). Testing for trimethylbenzenes did not begin until 2001 and thus were not evaluated in the health assessment. The current natural attenuation monitoring program analyzes for 37 VOC including all chemicals of concern. The most recent sampling data indicates that trimethylbenzenes exceed NR 140 criteria in four of the 26 wells sampled.
- Methylene chloride and acetone have been found in groundwater samples collected at the Site. These two VOCs are common laboratory artifacts and their presence in the groundwater samples is attributed to the laboratory.
- Concentrations of iron and manganese in groundwater samples collected at the Site have exceeded criteria. Background levels of iron and manganese in shallow groundwater in Wisconsin are similar to the concentrations detected at the Site.
- The Ackerman domestic residential well 207 feet deep and is located downgradient of he Site. This well is used for potable uses.

The following are recommendations for this Site resulting from the recent monitoring events.

- Continue natural attenuation monitoring and evaluation in accordance with plan approvals. Determine if natural attenuation can be an effective modification to the ROD remedy that remains protective of human health and the environment.
- Determine if the presence of the trimethylbenzenes requires an additional health analysis.
- Require that the laboratory instill better practices to reduce the occurrence of methylene chloride and acetone in samples. WDNR has already mandated better laboratory practices and if future laboratory performance does not improve, corrective actions will be implemented.
- Complete additional studies to evaluate the occurrence of iron and manganese (as well as other metals) in the groundwater with respect to background levels and develop Wisconsin Alternative Concentration Limits (WACLs) for iron and manganese, if applicable. Additional
- Increase sampling frequency of twice per year for Ackerman residential well to better determine changes in groundwater quality. Ongoing groundwater sampling will be completed by the WDNR.



#### 7.0 REFERENCES

#### References, Major Documents Reviewed

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- WDNR. Understanding Chlorinated Hydrocarbon Behavior in Groundwater: (Draft) Pub-RR-69. December 2002.
- Wisconsin Division of Health. *Preliminary Health Assessment, Onalaska Municipal Landfill.* December 1988.



### SEVERN TRENT LABORATORIES, INC. PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

PAGE 1

Lot #: A3D290115

ONALASKA LANDFILL

Date Reported: 5/07/03

	ONALASKA LANDFILL			Date Reported:		5/07/0
		REPORTING		ANALYTICAL		
PARAMETER	RESULT	LIMIT	UNITS	METHOD		
ient Sample ID: ACKERMAN						
ample #: 001 Date Sampled: (	04/22/03 13	:10 Date F	Received:	04/24/03	Matrix:	WATER
-						
Trace Inductively Coupled Plasm						Reviewe
Arsenic	ND	0.010	mg/L		6010B	
Cadmium	ND	0.0020	mg/L	SW846	6010B	
Cobalt	ND	0.0070	mg/L	SW846	6010B	
Lead	0.0034	0.0030	mg/L	SW846	6010B	
Vanadium	ND	0.0070	mg/L	SW846	6010B	
Inductively Coupled Plasma (ICI	P) Metals					Reviewe
Barium	0.024 B	0.20	mg/L	SW846	6010B	,,,
Iron	5.9	0.10	mg/L		6010B	
Manganese	0.12	0.015	mg/L		6010B	
Mercury	ND	0.00020	mg/L	54010	7470A	
B Estimated result. Result is less than RL.	ND	0.00020	д/ Б	DNO 10	747021	
B Estimated result. Result is less than RL.	ND		g, 1	5,010	747021	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS						Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS  Bromomethane	ND	1.0	ug/L	SW846	8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS  Bromomethane  Chloroethane	ND ND	1.0	ug/L ug/L	SW846 SW846	8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS  Bromomethane  Chloroethane  Chloromethane	ND ND ND	1.0 1.0 1.0	ug/L ug/L ug/L	SW846 SW846 SW846	8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS  Bromomethane Chloroethane Chloromethane Acetone	ND ND ND ND	1.0 1.0 1.0	ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane	ND ND ND ND ND	1.0 1.0 1.0 10	ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform	ND ND ND ND ND ND	1.0 1.0 1.0 10 1.0	ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND ND ND ND ND ND ND ND	1.0 1.0 1.0 10 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	ND	1.0 1.0 1.0 10 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND	1.0 1.0 1.0 10 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND	1.0 1.0 1.0 10 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846 SW846	8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B 8260B	Review

(Continued on next page)

## SEVERN TRENT LABORATORIES, INC. PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

PAGE 2

Lot #: A3D290115

ONALASKA LANDFILL

Date Reported: 5/07/03

PARAMETER			REPORTING LIMIT UNI		ANALY METHO	YTICAL OD	
Client Sample ID: ACKERMAN							
Sample #: 001 Date Sampled:	04/22/03	13:10	Date	Received:	04/24/03	Matrix:	WATER
Volatile Organics by GC/MS							Reviewed
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L	SW846	8260B	
1,1,2-Trichloroethane	ИD		1.0	ug/L	SW846	8260B	
Benzene	ND		1.0	ug/L	SW846	8260B	
1,1-Dichloroethane	ND		1.0	ug/L	SW846	8260B	
cis-1,2-Dichloroethene	ND		0.50	ug/L	SW846	8260B	
trans-1,2-Dichloroethene	ND		0.50	ug/L	SW846	8260B	
1,1-Dichloroethene	ND		1.0	ug/L	SW846	8260B	
Ethylbenzene	ND		1.0	ug/L	SW846	8260B	
Methylene chloride	ND		1.0	ug/L	SW846	8260B	
Naphthalene	ND		1.0	ug/L	SW846	8260B	
Tetrachloroethene	ND		1.0	ug/L	SW846	8260B	
Toluene	ND		1.0	ug/L	SW846	8260B	
1,1,1-Trichloroethane	ND		1.0	ug/L	SW846	8260B	
Trichloroethene	ND		1.0	ug/L	SW846	8260B	
1,2,4-Trimethylbenzene	ND		1.0	ug/L	SW846	8260B	
1,3,5-Trimethylbenzene	ND		1.0	ug/L	SW846	8260B	
Vinyl chloride	ND		1.0	ug/L	SW846	8260B	
Xylenes (total)	ND		1.0	ug/L	SW846	8260B	

Client Sample ID: HUBLEY

Date Sampled: 04/22/03 15:00 Date Received: 04/24/03 Matrix: WATER

Trace Inductively Coupled Plasma	(ICP) Meta	ls			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP)	Metals				Reviewed
Barium	0.084 B	0.20	mg/L	SW846 6010B	
Iron	0.16	0.10	mg/L	SW846 6010B	
Manganese	0.20	0.015	mg/L	SW846 6010B	

(Continued on next page)

### SEVERN TRENT LABORATORIES, INC. PRELIMINARY DATA SUMMARY

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ENSR Consulting & Engineering

PAGE

Naphthalene

Tetrachloroethene

Lot #: A3D290115	ONALASKA LA	_	9	Date Repo	orted:	5/07/03
PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTI METHOD	CAL	
Client Sample ID: HUBLEY Sample #: 002 Date Sampled: 0	4/22/03 15:0	0 Date Rec	eived: 0	4/24/03 Ma	trix:	WATER
Mercury in Liquid Waste (Manual Mercury	Cold-Vapor) ND	0.00020	mg/L	SW846 7	470A	Reviewed
B Estimated result. Result is less than RL.						
Volatile Organics by GC/MS						Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8	1260B	
Chloroethane	ND	1.0	ug/L	SW846 8		
Chloromethane	ND	1.0	ug/L	SW846 8		
Acetone	ND	10	ug/L	SW846 8		
Bromodichloromethane	ND	1.0	ug/L	SW846 8		
Bromoform	ND	1.0	ug/L	SW846 8		
2-Butanone	ND	10	ug/L	SW846 8		
Carbon disulfide	ND	1.0	ug/L	SW846 8		
Carbon tetrachloride	ND	1.0	ug/L	SW846 8		
Chlorobenzene	ND	1.0	ug/L	SW846 8		
Dibromochloromethane	ND	1.0	ug/L	SW846 8		
Chloroform	ND	1.0	ug/L	SW846 8	3260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8	3260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8		
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8	3260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8	3260B	
2-Hexanone	ND	10	ug/L	SW846 8	3260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8	3260B	
Styrene	ND	1.0	ug/L	SW846 8	3260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8	3260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8	3260B	
Benzene	ND	1.0	ug/L	SW846 8	3260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8	3260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8		
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8		
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8		
Ethylbenzene	ND	1.0	ug/L	SW846 8		
Methylene chloride	ND	1.0	ug/L	SW846 8	3260B	

(Continued on next page)

1.0

1.0

uq/L

ug/L

SW846 8260B

SW846 8260B

ND

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_

ENSR Consulting & Engineering

PAGE 4

Lot #: A3D290115

Xylenes (total)

ONALASKA LANDFILL

ND

Date Reported: 5/07/03

1.0 ug/L SW846 8260B

PARAMETER		RESUL		PORTI MIT	ING UNIȚS	ANALY METHO	TICAL DD	
Client Sample ID: HUB	LEY							
Sample #: 002 Dat	e Sampled: 04	1/22/03	15:00	Date	Received:	04/24/03	Matrix:	WATER
Volatile Organics b	y GC/MS							Reviewed
Toluene		ND	1.	0	ug/L	SW846	8260B	
1,1,1-Trichloroet	hane	ND	1.	0	ug/L	SW846	8260B	
Trichloroethene		ND	1.	0	ug/L	SW846	8260B	
1,2,4-Trimethylbe	nzene	ND	1.	0	ug/L	SW846	8260B	
1,3,5-Trimethylbe	nzene	ND	1.	0	ug/L	SW846	8260B	
Vinyl chloride		ND	1.	0	ug/L	SW846	8260B	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSE Lot #: A3D240294	Consulting ONALASKA	& Engineerin LANDFILL	Date Reported	PAGE 1 5/05/03	
		REPORTING		ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Comple ID. WRID DIMMY					
Client Sample ID: TRIP BLANK Sample #: 001 Date Sampled:	04/22/02	Date Pec	. borria	04/24/03 Matrix	. נוא ייינים
sample #: 001 Date Sampled:	04/22/03	Date Rec	erveu:	04/24/03 Macrix	: WAIEK
Volatile Organics by GC/MS					In Review
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	3.5 J	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	2.2 J	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	1.0	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ИD	1.0	ug/I,	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinvl chloride	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

1.0

1.0

ND

ND

Vinyl chloride

Xylenes (total)

ug/L ug/L

SW846 8260B

SW846 8260B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

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ENSR Consulting & Engineering

PAGE 2

Lot #: A3D240294

ONALASKA LANDFILL

Date Reported: 5/05/03

REPORTING

ANALYTICAL

METHOD

PARAMETER

RESULT

LIMIT UNITS

Client Sample ID: TRIP BLANK

Sample #: 001 Date Sampled: 04/22/03 Date Received: 04/24/03 Matrix: WATER

Volatile Organics by GC/MS

In Review

Client Sample ID: AW-13

Sample #: 002 Date Sampled: 04/22/03 15:25 Date Received: 04/24/03 Matrix: WATER

Trace Inductively Coupled Plasma Arsenic Cadmium Cobalt Lead Vanadium	(ICP) Meta 0.0048 B 0.00034 B ND ND ND	0.010 0.0020 0.0070 0.0030 0.0070	mg/L mg/L mg/L mg/L mg/L	SW846 6010B SW846 6010B SW846 6010B SW846 6010B	Reviewed
Inductively Coupled Plasma (ICP)	Metals				Reviewed
Barium	0.20	0.20	mg/L	SW846 6010B	
Iron	34.8	0.10	mg/L	SW846 6010B	
Manganese	11.4	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (Manual Mercury	Cold-Vapor) ND	0.00020	mg/L	SW846 7470A	Reviewed
B Estimated result. Result is less than RL.					
Dissolved Gases in Water					In Review
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	2200	5.0	ug/L	RSK SOP-175	
Volatile Organics by GC/MS					In Review
Bromomethane	ND	22	ug/L	SW846 8260B	
Chloroethane	ND	22	ug/L	SW846 8260B	
Chloromethane	ND	22	ug/L	SW846 8260B	
Acetone	ИD	220	ug/L	SW846 8260B	
Bromodichloromethane	ND	22	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. 

ENSR Consulting & Engineering

PAGE 3

Lot #: A3D240294

ONALASKA LANDFILL

Date Reported: 5/05/03

		REPORTING		ANALYTICAL
PARAMETER	RESULT	LIMIT	UNITS	METHOD

Client	Sample	TD:	AW-13

Sample #: 002 Date Sampled: 04/22/03 15:25 Date Received: 04/24/03 Matrix: WATER

Volatile Organics by GC/MS					In Review
Bromoform	ND	22	${\tt ug/L}$	SW846 8260B	
2-Butanone	ND	220	ug/L	SW846 8260B	
Carbon disulfide	ND	22	${\tt ug/L}$	SW846 8260B	
Carbon tetrachloride	ND	22	ug/L	SW846 8260B	
Chlorobenzene	ND	22	ug/L	SW846 8260B	
Dibromochloromethane	ND	22	ug/L	SW846 8260B	
Chloroform	ND	22	${\tt ug/L}$	SW846 8260B	
1,2-Dichloroethane	ND	22	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	22	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	22	${\tt ug/L}$	SW846 8260B	
trans-1,3-Dichloropropene	ND	22	${ m ug/L}$	SW846 8260B	
2-Hexanone	ND	220	${\tt ug/L}$	SW846 8260B	
4-Methyl-2-pentanone	ND	220	${ m ug/L}$	SW846 8260B	
Styrene	ND	22	${ m ug/L}$	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	22	${\tt ug/L}$	SW846 8260B	
1,1,2-Trichloroethane	ND	22	ug/L	SW846 8260B	
Benzene	ND	22	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	22	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	11	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	11	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	22	${\tt ug/L}$	SW846 8260B	
Ethylbenzene	ND	22	ug/L	SW846 8260B	
Methylene chloride	ND	22	ug/L	SW846 8260B	
Naphthalene	ND	22	ug/L	SW846 8260B	
Tetrachloroethene	ND	22	ug/L	SW846 8260B	
Toluene	ND	22	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	22	ug/L	SW846 8260B	
Trichloroethene	ND	22	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	860	22	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	32	22	ug/L	SW846 8260B	
Vinyl chloride	ND	22	ug/L	SW846 8260B	
Xylenes (total)	10 J	22	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A3D240294 ONALASKA LANDFILL 5/05/03 Date Reported: REPORTING ANALYTICAL UNITS PARAMETER LIMIT METHOD RESULT Client Sample ID: AW-13 Sample #: 002 Date Sampled: 04/22/03 15:25 Date Received: 04/24/03 Matrix: WATER Inorganic Analysis Reviewed Alkalinity 260 5.0 mq/L MCAWW 310.1 Chloride 6.7 1.0 mq/L MCAWW 300.0A Nitrate as N 0.010 B 0.10 mq/L MCAWW 300.0A Sulfate 0.49 B 1.0 mg/L MCAWW 300.0A Total Organic Carbon 5 7 mg/L MCAWW 415.1 B Estimated result. Result is less than RL. Client Sample ID: AW-25 Sample #: Date Sampled: 04/22/03 17:30 Date Received: 04/24/03 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic ND 0.010 mg/L SW846 6010B Cadmium 0.0020 mg/L SW846 6010B SW846 6010B Cobalt 0.0021 B 0.0070 mg/L Lead ND SW846 6010B 0.0030 mg/L Vanadium ND 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.23 0.20 mq/L SW846 6010B Iron 3.6 0.10 mq/L SW846 6010B Manganese 2.3 0.015 SW846 6010B mg/L Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed Mercury 0.00020 SW846 7470A mg/L 8 Estimated result. Result is less than RL. Dissolved Gases in Water In Review Ethane ND 5.0 ug/L RSK SOP-175 Ethene ND 5.0 uq/L RSK SOP-175

(Continued on next page)

5.0

ug/L

RSK SOP-175

1400

Methane

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot

#: A3D240294	R Consulting ONALASKA		Date Re	PAGE 5 5/05/03		
PARAMETER	RESULT	REPORTIN LIMIT	G UNITS	ANALY METHO		
						<del></del>
ient Sample ID: AW-25						
ample #: 003 Date Sampled:	04/22/03 17	:30 Date R	eceived:	04/24/03	Matrix:	WATER
Volatile Organics by GC/MS						In Revie
Bromomethane	ND	2.5	ug/L	SW846	8260B	
Chloroethane	ND	2.5	ug/L		8260B	
Chloromethane	ND	2.5	ug/L		8260B	
Acetone	ND	25	ug/L		8260B	
Bromodichloromethane	ND	2.5	ug/L		8260B	
Bromoform	ND	2.5	ug/L		8260B	
2-Butanone	ND	25	ug/L		8260B	
Carbon disulfide	ND	2.5	ug/L		8260B	
Carbon tetrachloride	ND	2.5	ug/L		8260B	
Chlorobenzene	ND	2.5	ug/L		8260B	
Dibromochloromethane	ND	2.5	ug/L		8260B	
Chloroform	ND	2.5	ug/L		8260B	
1,2-Dichloroethane	ND	2.5	ug/L		8260B	
1,2-Dichloropropane	ND	2.5	ug/L		8260B	
cis-1,3-Dichloropropene	ND	2.5	ug/L		8260B	
trans-1,3-Dichloropropene	ND	2.5	ug/L		8260B	
2-Hexanone	ND	25	ug/L		8260B	
4-Methyl-2-pentanone	ND	25	ug/L		8260B	
Styrene	ND	2.5	ug/L		8260B	
1,1,2,2-Tetrachloroethane	ND	2.5	ug/L		8260B	
	ND	2.5	ug/L ug/L			
1,1,2-Trichloroethane					8260B	
Benzene	ND	2.5	ug/L		8260B	
1,1-Dichloroethane	ND	2.5	ug/L		8260B	
cis-1,2-Dichloroethene	ND	1.2	ug/L		8260B	
trans-1,2-Dichloroethene	ND	1.2	ug/L		8260B	
1,1-Dichloroethene	ND	2.5	ug/L		8260B	
Ethylbenzene	ND	2.5	ug/L		8260B	
Methylene chloride	ND	2.5	ug/L		8260B	
Naphthalene	ND	2.5	ug/L		8260B	
Tetrachloroethene	ND	2.5	ug/L		8260B	
Toluene	ND	2.5	ug/L		8260B	
1,1,1-Trichloroethane	ND	2.5	ug/L		8260B	
Trichloroethene	ИD	2.5	ug/L		8260B	
1,2,4-Trimethylbenzene	52	2.5	ug/L	SW846	8260B	
1,3,5-Trimethylbenzene	9.1	2.5	ug/L	SW846	8260B	
Vinyl chloride	ND	2.5	ug/L	SW846	8260B	

(Continued on next page)

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 6 Lot #: A3D240294 ONALASKA LANDFILL 5/05/03 Date Reported: REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-25 Sample #: 003 Date Sampled: 04/22/03 17:30 Date Received: 04/24/03 Matrix: WATER Volatile Organics by GC/MS In Review Xylenes (total) 2.5 ug/L 2.9 SW846 8260B Inorganic Analysis Reviewed Alkalinity 320 5.0 mg/L MCAWW 310.1 15.2 Chloride 1.0 mg/L MCAWW 300.0A Nitrate as N 2.2 mg/L 0.10 MCAWW 300.0A 1.9 1.0 mg/L Sulfate MCAWW 300.0A Total Organic Carbon mg/L MCAWW 415.1 Client Sample ID: MW-2M Sample #: 004 Date Sampled: 04/22/03 11:25 Date Received: 04/24/03 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.019 0.010 mg/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt ND 0.0070 mg/L SW846 6010B Lead ND 0.0030 mq/L SW846 6010B

Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed SW846 7470A Mercury ND 0.00020 mg/L Dissolved Gases in Water In Review Ethane ND 1.0 uq/L RSK SOP-175 Ethene ND 1.0 ug/L RSK SOP-175 Methane 310 1.0 ug/L RSK SOP-175

0.0070

0.20

0.10

0.015

mg/L

mg/L

mg/L

mg/L

SW846 6010B

SW846 6010B

SW846 6010B

SW846 6010B

Reviewed

(Continued on next page)

0.66

9.6

0.64

Vanadium

Barium

Manganese

Iron

Inductively Coupled Plasma (ICP) Metals

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

\_\_\_\_\_\_

#### ENSR Consulting & Engineering

PAGE 7 Date Reported: 5/05/03

Lot #: A3D240294

ONALASKA LANDFILL

REPORTING ANALYTICAL RESULT LIMIT UNITS METHOD

Client Sample ID: MW-2M

Sample #: 004 Date Sampled: 04/22/03 11:25 Date Received: 04/24/03 Matrix: WATER

Volatile Organics by GC/MS					In Review
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ИD	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ИD	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	${\tt ug/L}$	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE 8 Lot #: A3D240294 ONALASKA LANDFILL Date Reported: 5/05/03 REPORTING ANALYTICAL PARAMETER RESULT LIMIT METHOD \_ UNITS Client Sample ID: MW-2M Date Sampled: 04/22/03 11:25 Date Received: 04/24/03 Matrix: WATER Sample #: 004 Volatile Organics by GC/MS In Review Xylenes (total) ND 1.0 uq/L SW846 8260B Inorganic Analysis Reviewed Alkalinity 160 5.0 mq/L MCAWW 310.1 Chloride 16.0 1.0 mq/L MCAWW 300.0A Nitrate as N ND 0.10 mg/L MCAWW 300.0A Sulfate ND 1.0 mg/L MCAWW 300.0A Total Organic Carbon 4 1 mg/L MCAWW 415.1 Client Sample ID: MW-2S Sample #: 005 Date Sampled: 04/22/03 11:05 Date Received: 04/24/03 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.012 0.010 mg/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.0070 SW846 6010B 0.0013 B mg/L Lead ND 0.0030 mg/L SW846 6010B Vanadium 0.0020 B 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed 0.14 B 0.20 mg/L SW846 6010B Iron 29.3 0.10 ma/L SW846 6010B 2.8 0.015 mg/L SW846 6010B Manganese Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed Mercury ND 0.00020 mg/L SW846 7470A B Estimated result. Result is less than RL. Dissolved Gases in Water In Review Ethane ND 2.5 ug/L RSK SOP-175 ND 2.5 uq/L RSK SOP-175 Ethene 2.5 ug/L RSK SOP-175 Methane 540

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. 

#### ENSR Consulting & Engineering

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Lot #: A3D240294

ONALASKA LANDFILL

Date Reported: 5/05/03

		REPORTING		ANALYTICAL
PARAMETER	RESULT	LIMIT	UNITS	METHOD

Client Sample ID: MW-2S

Date Sampled: 04/22/03 11:05 Date Received: 04/24/03 Matrix: WATER Sample #: 005

Volatile Organics by GC/MS					In Review
Bromomethane	ND	1.0	ug/L	SW846 8260B	III Keviev
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	1.5	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	0.45 J	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ИD	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	

t #: A3D240294	ENSR Consulting of ONALASKA L		ng	Date Reported:	PAGE 10 5/05/03
		REPORTING	;	ANALYTICAL	
PARAMETER	RESULT	LIMIT	<u>UNITS</u>	METHOD	
Client Sample ID: MW-2S					
	pled: 04/22/03 11:0	)5 Date Re	eceived: 04	/24/03 Matrix:	WATER
Volatile Organics by GC/N	MS				In Review
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
J Estimated result. Result is less than RL.					
Inorganic Analysis					Reviewed
Alkalinity	170	5.0	mg/L	MCAWW 310.1	
Chloride	18.4	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	0.010 B	0.10	mg/L	MCAWW 300.0A	
Sulfate Total Organic Carbon	0.22 B 4	1.0	mg/L mg/L	MCAWW 300.0A MCAWW 415.1	
B Estimated result. Result is less than RL.					
Client Sample ID: MW-5S Sample #: 006 Date Samp	pled: 04/22/03 12:	00 Date Re	eceived: 04	/24/03 Matrix:	WATER
Trace Inductively Coupled	d Plasma (ICP) Met	als			Reviewed
Arsenic	0.011	0.010	mg/L	SW846 6010B	200.000
Arsenic		0 0000	mg/L	SW846 6010B	
Cadmium	ND	0.0020			
	ND 0.0041 B	0.0020	mg/L	SW846 6010B	
Cadmium Cobalt Lead			-	<b>SW846 6010B</b> SW846 6010B	
Cadmium Cobalt	0.0041 B	0.0070	mg/L		
Cadmium Cobalt Lead	0.0041 B ND ND	<b>0.0070</b> 0.0030	<b>mg/L</b> mg/L	SW846 6010B	Reviewed
Cadmium Cobalt Lead Vanadium	0.0041 B ND ND	<b>0.0070</b> 0.0030	<b>mg/L</b> mg/L	SW846 6010B	Reviewed
Cadmium Cobalt Lead Vanadium Inductively Coupled Plass	0.0041 B ND ND ma (ICP) Metals 0.28 19.4	0.0070 0.0030 0.0070 0.20 0.10	<b>mg/L</b> mg/L mg/L	SW846 6010B SW846 6010B	Reviewed
Cadmium Cobalt Lead Vanadium Inductively Coupled Plass Barium	0.0041 B ND ND ND ma (ICP) Metals 0.28	0.0070 0.0030 0.0070	mg/L mg/L mg/L	SW846 6010B SW846 6010B	Reviewed
Cadmium Cobalt Lead Vanadium Inductively Coupled Plass Barium Iron	0.0041 B ND ND ma (ICP) Metals 0.28 19.4 2.0	0.0070 0.0030 0.0070 0.20 0.10 0.015	mg/L mg/L mg/L mg/L mg/L	SW846 6010B SW846 6010B SW846 6010B	Reviewed Reviewed

 $<sup>{\</sup>sf B}$  . Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

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Lot #: A3D240294

ONALASKA LANDFILL

Date Reported: 5/09

ot #: A3D240294	ONALASKA	LANDFILL		Date Reported:		5/05/03	
		REPORTI	NG	ANAL	ANALYTICAL		
PARAMETER	RESULT	LIMIT	UNITS	METHO	DD	The state of the s	
Client Sample ID: MW-5S							
Sample #: 006 Date Sampled:	04/22/03 1	2:00 Date	Received:	04/24/03	Matrix:	WATER	
	,						
Dissolved Gases in Water						In Review	
Ethane	ND	0.50	ug/L	RSK S	SOP-175		
Ethene	ND	0.50	ug/L	RSK S	SOP-175		
Methane	230	0.50	ug/L	RSK S	SOP-175		
Volatile Organics by GC/MS						In Review	
Bromomethane	ND	5.7	ug/L	SW846	8260B		
Chloroethane	ND	5.7	ug/L	SW846	5 8260B		
Chloromethane	ND	5.7	ug/L	SW846	6 8260B		
Acetone	ND	57	ug/L	SW846	5 8260B		
Bromodichloromethane	ND	5.7	ug/L	SW846	6 8260B		
Bromoform	ND	5.7	ug/L	SW846	5 8260B		
2-Butanone	ND	57	ug/L	S,W846	6 8260B		
Carbon disulfide	ND	5.7	ug/L	SW846	8260B		
Carbon tetrachloride	ND	5.7	ug/L	SW846	5 8260B		
Chlorobenzene	ND	5.7	ug/L	SW846	5 8260B		
Dibromochloromethane	ND	5.7	ug/L	SW846	5 8260B		
Chloroform	ND	5.7	ug/L	SW846	5 8260B		
1,2-Dichloroethane	ND	5.7	ug/L	SW84	8260B		
1,2-Dichloropropane	ND	5.7	ug/L	SW846	8260B		
cis-1,3-Dichloropropene	ND	5.7	ug/L	SW84	5 8260B		
trans-1,3-Dichloropropene	ND	5.7	ug/L	SW846	8260B		
2-Hexanone	ND	57	ug/L	SW846	8260B		
4-Methyl-2-pentanone	ND	57	ug/L	SW84	8260B		
Styrene	ND	5.7	ug/L	SW84	8260B		
1,1,2,2-Tetrachloroethane	ND	5.7	ug/L	SW84	5 8260B		
1,1,2-Trichloroethane	ND	5.7	ug/L	SW84	6 8260B		
Benzene	ND	5.7	ug/L	SW84	6 8260B		
1,1-Dichloroethane	ND	5.7	ug/L	SW84	6 8260B		
cis-1,2-Dichloroethene	ND	2.9	ug/L	SW84	6 8260B		
trans-1,2-Dichloroethene	ND	2.9	ug/L	SW84	6 8260B		
1,1-Dichloroethene	ND	5.7	ug/L	SW84	6 8260B		
Ethylbenzene	5.1 J	5.7	ug/L	SW84	6 8260B		
Methylene chloride	ND	5.7	ug/L	SW84	6 8260B		
Naphthalene	5.4 J	5.7	ug/L	SW84	6 8260B		
Tetrachloroethene	ND	5.7	ug/L	SW84	6 8260B		
	-	- • •	3/	231			

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \*\*\*\*\*\* ENSR Consulting & Engineering PAGE 12 Lot #: A3D240294 ONALASKA LANDFILL 5/05/03 Date Reported: REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-5S Sample #: 006 Date Sampled: 04/22/03 12:00 Date Received: 04/24/03 Matrix: WATER Volatile Organics by GC/MS In Review uq/L Toluene ND 5.7 SW846 8260B 1,1,1-Trichloroethane 5.7 ND uq/L SW846 8260B Trichloroethene ND uq/L 5.7 SW846 8260B 180 1,2,4-Trimethylbenzene 5.7 uq/L SW846 8260B 1,3,5-Trimethylbenzene 38 5.7 uq/L SW846 8260B Vinyl chloride ND 5.7 ug/L SW846 8260B Xylenes (total) 13 5.7 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 160 mg/L 5.0 MCAWW 310.1 Chloride 5.7 1.0 mg/L MCAWW 300.0A Nitrate as N 0.62 0.10 mg/L MCAWW 300.0A Sulfate 3.3 1.0 mg/L MCAWW 300.0A Total Organic Carbon 1 mg/L MCAWW 415.1 Client Sample ID: PZ-05 Date Sampled: 04/23/03 08:20 Date Received: 04/24/03 Matrix: WATER Sample #: 007 Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.010 mq/L SW846 6010B Cadmium ND 0.0020 mq/L SW846 6010B Cobalt ND 0.0070 mq/L SW846 6010B Lead ND 0.0030 mg/L SW846 6010B Vanadium 0.00075 B 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.075 B 0.20 mg/L SW846 6010B Iron 0.12 0.10 mg/L SW846 6010B Manganese 0.17 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed

(Continued on next page)

0.00020

mq/L

SW846 7470A

Mercury

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_

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DAGE 13

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ENSI	R Consulting	& Engineer	ing		PAGE
: #: A3D240294	ONALASKA	LANDFILL	Date Reported:	5/05/03	
	REPORTING		ANALYTICAL		
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
lient Sample ID: PZ-05					
Sample #: 007 Date Sampled:	04/23/03 08	:20 Date R	leceived: (	04/24/03 Matrix:	WATER
Mercury in Liquid Waste (Manus	al Cold-Vapo:	r)			Reviewed
B Estimated result. Result is less than RL.					
Dissolved Gases in Water					In Revie
Ethane	ND	0.50	uq/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	210	0.50	ug/L	RSK SOP-175	
W. J. J. J. G. G. J. G. G. Ma					To Books
Volatile Organics by GC/MS	NTD	7 0	/*	CHOAC OOCOD	In Revie
Bromomethane Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND ND	1.0 1.0	ug/L ug/L	SW846 8260B	
Acetone	ND ND	1.0	ug/L	SW846 8260B SW846 8260B	
Bromodichloromethane	ND ND	1.0	ug/L ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ИD	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ИD	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering PAGE 14 Lot #: A3D240294 ONALASKA LANDFILL Date Reported: 5/05/03 REPORTING ANALYTICAL RESULT LIMIT UNITS METHOD Client Sample ID: PZ-05 Sample #: 007 Date Sampled: 04/23/03 08:20 Date Received: 04/24/03 Matrix: WATER Volatile Organics by GC/MS In Review Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride 0.34 J 1.0 ug/L SW846 8260B Naphthalene ND 1.0 ug/L SW846 8260B Tetrachloroethene ND 1.0 ug/L SW846 8260B ND 1.0 Toluene ug/L SW846 8260B 1,1,1-Trichloroethane ND1.0 uq/L SW846 8260B Trichloroethene ND 1.0 ug/L SW846 8260B 1,2,4-Trimethylbenzene ND 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene ND1.0 ug/L SW846 8260B ND 1.0 Vinyl chloride ug/L SW846 8260B Xylenes (total) ND 1.0 ug/L SW846 8260B

Inorganic Analysis				Reviewed
Alkalinity	220	5.0	mg/L	MCAWW 310.1
Chloride	8.6	1.0	mg/L	MCAWW 300.0A
Nitrate as N	0.37	0.10	mg/L	MCAWW 300.0A
Sulfate	10.1	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	1	1	mg/L	MCAWW 415.1

Client Sample ID: MW-1M

J Estimated result. Result is less than RL.

Sample #: 008 Date Sampled: 04/22/03 19:40 Date Received: 04/24/03 Matrix: WATER

Trace Inductively Coupled Plasma	(ICP) Meta	ls			Reviewed
Arsenic	0.010	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ИD	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP)	Metals				Reviewed
Barium	0.33	0.20	mg/L	SW846 6010B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

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Lot #: A3D240294

ONALASKA LANDFILL

Date Reported: 5/05/03

					.,,	
PARAMETER	REPORTING AMETER RESULT LIMIT UNIT		UNITS	ANALYTICAL  METHOD		
Client Sample ID: MW-1M				10.1.100		
Sample #: 008 Date Sampled:	04/22/03 19:	:40 Date Re	eceived: 04	/24/03 Matrix:	WATER	
Iron	7.7	0.10	mq/L	SW846 6010B		
Manganese	1.6	0.015	mg/L	SW846 6010B		
Mercury in Liquid Waste (Manua	ıl Cold-Vapoı	r)			Reviewed	
Mercury	ND	0.00020	mg/L	SW846 7470A		
Dissolved Gases in Water					In Review	
Ethane	ND	0.50	ug/L	RSK SOP-175		
Ethene	ND	0.50	ug/L	RSK SOP-175		
Methane	89	0.50	ug/L	RSK SOP-175		
Volatile Organics by GC/MS					In Review	
Bromomethane	ND	1.0	uq/L	SW846 8260B		
Chloroethane	ND	1.0	ug/L	SW846 8260B		
Chloromethane	ND	1.0	ug/L	SW846 8260B		
Acetone	ND	10	ug/L	SW846 8260B		
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B		
Bromoform	ND	1.0	ug/L	SW846 8260B		
2-Butanone	ND	10	ug/L	SW846 8260B		
Carbon disulfide	ND	1.0	ug/L	SW846 8260B		
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B		
Chlorobenzene	ND	1.0	ug/L	SW846 8260B		
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B		
Chloroform	ND	1.0	ug/L	SW846 8260B		
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B		
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B		
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B		
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B		
2-Hexanone	ND	10	ug/L	SW846 8260B		
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B		
Styrene	ND	1.0	ug/L	SW846 8260B		
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B		
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B		
Benzene	ND	1.0	ug/L	SW846 8260B		
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B		
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B		

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

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ot #: A3D240294		ONALASKA LANDFILL			5/05/03
PARAMETER	RESULT	REPORTI LIMIT	NG <u>UNITS</u>	ANALYTICAL METHOD	
Client Sample ID: MW-1M					
<del>-</del>	ampled: 04/22/03 19:4	0 Date	Received: (	04/24/03 Matrix:	WATER
Volatile Organics by G	C/MS				In Review
trans-1,2-Dichloroet	·	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	0.32 Л	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethan		1.0	ug/L	SW846 8260B	
Trichloroethene	ND ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenze		1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenze			_		
-		1.0	ug/L	SW846 8260B	
Vinyl chloride Xylenes (total)	ND ND	1.0 1.0	ug/L ug/L	SW846 8260B SW846 8260B	
J Estimated result. Result is less than RL		2.1.5	~9/ ~-	2	
J Estimated Jesuit. Result is less than RE	•				
Inorganic Analysis					Reviewed
Alkalinity	72	5.0	mg/L	MCAWW 310.1	
Chloride	8.1	1.0	mg/L	MCAWW 300.0A	1
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	Δ
Sulfate	5.7	1.0	mg/L	MCAWW 300.0A	1
Total Organic Carbon	3	1	mg/L	MCAWW 415.1	
Client Sample ID: MW-1S					
	ampled: 04/22/03 19:	35 Date	Received:	04/24/03 Matrix:	WATER
Trace Inductively Coup	led Plasma (ICP) Met	als			Reviewed
Arsenic	ND	0.010	${ m mg/L}$	SW846 6010B	
Cadmium	ИД	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ИД	0.0030	mg/L	SW846 6010B	
Vanadium	0.0012 B	0.0070	mg/L	SW846 6010B	
Inductively Coupled Pl					Reviewed
Barium	0.039 B	0.20	mg/L	SW846 6010B	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

2/03 19:3 .12 .76 ld-Vapor)	0.10 0.015 0.00020 0.50 0.50	UNITS  ceived: 04  mg/L  mg/L  mg/L  ug/L  ug/L  ug/L	ANALYTICAL METHOD  2/24/03 Matrix: SW846 6010B SW846 6010B SW846 7470A  RSK SOP-175 RSK SOP-175 RSK SOP-175	WATER Reviewed In Review
.12 .76 ld-Vapor)	0.10 0.015 0.00020 0.50 0.50	mg/L mg/L mg/L ug/L ug/L	SW846 6010B SW846 6010B SW846 7470A RSK SOP-175 RSK SOP-175	Reviewed
.12 .76 ld-Vapor)	0.10 0.015 0.00020 0.50 0.50	mg/L mg/L mg/L ug/L ug/L	SW846 6010B SW846 6010B SW846 7470A RSK SOP-175 RSK SOP-175	Reviewed
.76 ld-Vapor) O O 50	0.015 0.00020 0.50 0.50 0.50	mg/L mg/L ug/L ug/L	SW846 6010B  SW846 7470A  RSK SOP-175 RSK SOP-175	In Revie
ld-Vapor)	0.00020 0.50 0.50 0.50	mg/L ug/L ug/L	SW846 7470A  RSK SOP-175 RSK SOP-175	In Revie
D D D D D D	0.00020 0.50 0.50 0.50	ug/L ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175	In Revie
D D D D D D	0.00020 0.50 0.50 0.50	ug/L ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175	
5 5 5 5 5 5	0.50 0.50	ug/L ug/L	RSK SOP-175	
5 5 5 5 5 5	0.50 0.50	ug/L ug/L	RSK SOP-175	
5 5 5 5 5 5	0.50 0.50	ug/L ug/L	RSK SOP-175	In Revie
5 <b>0</b> D	1.0	ug/L		In Revie
D D	1.0		RSK SOP-175	In Revie
D		ug/L		In Revie
D		ug/L		
	1 0	ug/ Li	SW846 8260B	
)	1.0	ug/L	SW846 8260B	
	1.0	ug/L	SW846 8260B	
)	10	ug/L	SW846 8260B	
D	1.0	ug/L	SW846 8260B	
D	1.0	ug/L	SW846 8260B	
.82 Ј	10	ug/L	SW846 8260B	
D	1.0	ug/L	SW846 8260B	
D	1.0	ug/L	SW846 8260B	
D	1.0	ug/L	SW846 8260B	
		_		
		_		
		_		
D.	1.0	ug/L	SW846 8260B	
	D D D D D D D D D D D D D D D D D D D	D 1.0	D 1.0 ug/L D 10 ug/L D 1.0 ug/L D 1.0 ug/L	D 1.0 ug/L SW846 8260B D 10 ug/L SW846 8260B D 10 ug/L SW846 8260B D 1.0 ug/L SW846 8260B D 1.0 ug/L SW846 8260B D 1.0 ug/L SW846 8260B

(Continued on next page)

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 18 ONALASKA LANDFILL Lot #: A3D240294 Date Reported: 5/05/03 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-1S Date Sampled: 04/22/03 19:35 Date Received: 04/24/03 Matrix: WATER Sample #: 009 Volatile Organics by GC/MS In Review 1,1-Dichloroethane ND 1.0 uq/L SW846 8260B cis-1,2-Dichloroethene ND 0.50 ug/L SW846 8260B trans-1,2-Dichloroethene ND 0.50 ug/L SW846 8260B 1,1-Dichloroethene ND 1.0 ug/L SW846 8260B Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride 0.37 J 1.0 SW846 8260B ug/L Naphthalene ND 1.0 uq/L SW846 8260B Tetrachloroethene ND 1.0 ug/L SW846 8260B Toluene ND 1.0 SW846 8260B ug/L 1,1,1-Trichloroethane ND 1.0 ug/L SW846 8260B Trichloroethene ND 1.0 ug/L SW846 8260B 1,2,4-Trimethylbenzene ND 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene ND 1.0 ug/L SW846 8260B Vinyl chloride ND1.0 ug/L SW846 8260B Xylenes (total) ND1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 140 5.0 mq/L MCAWW 310.1 Chloride 7.3 1.0 mq/L MCAWW 300.0A Nitrate as N 0.14 0.10 mg/L MCAWW 300.0A Sulfate 12.9 1.0 mg/L MCAWW 300.0A Total Organic Carbon mg/L MCAWW 415.1 Client Sample ID: PZ-1 Sample #: 010 Date Sampled: 04/23/03 10:20 Date Received: 04/24/03 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic ND 0.010 mq/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt ND 0.0070 mg/L SW846 6010B

(Continued on next page)

0.0030

mq/L

SW846 6010B

Lead

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering PAGE 19 Lot #: A3D240294 ONALASKA LANDFILL Date Reported: 5/05/03 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: PZ-1 Sample #: 010 Date Sampled: 04/23/03 10:20 Date Received: 04/24/03 Matrix: WATER Vanadium 0.0011 B 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed 0.031 B 0.20 mg/L SW846 6010B mg/L Iron ND 0.10 SW846 6010B Manganese 0.30 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed 0.00020 SW846 7470A Mercury ND mg/L B Estimated result. Result is less than RL. Dissolved Gases in Water In Review Ethane ND0.50 ug/L RSK SOP-175 Ethene ND 0.50 ug/L RSK SOP-175 Methane 1.5 0.50 ug/L RSK SOP-175 Volatile Organics by GC/MS In Review Bromomethane uq/L ND 1.0 SW846 8260B Chloroethane ND 1.0 uq/L SW846 8260B Chloromethane ND 1.0 ug/L SW846 8260B ND 10 ug/L Acetone SW846 8260B Bromodichloromethane ND 1.0 ug/L SW846 8260B Bromoform ND 1.0 ug/L SW846 8260B 2-Butanone ND 10 ug/L SW846 8260B Carbon disulfide ND 1.0 ug/L SW846 8260B Carbon tetrachloride ND 1.0 ug/L SW846 8260B Chlorobenzene ND 1.0 ug/L SW846 8260B Dibromochloromethane ND 1.0 ug/LSW846 8260B Chloroform ug/L ND 1.0 SW846 8260B 1,2-Dichloroethane NDuq/L 1.0 SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L SW846 8260B cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 uq/L SW846 8260B 2-Hexanone MD 1.0 uq/L SW846 8260B

(Continued on next page)

10

ug/L

SW846 8260B

MD)

4-Methyl-2-pentanone

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

PAGE 20

Lot #: A3D240294

	DEDODETIVA					
Da Da Mamaro	DIIGIII M	REPORTIN			TICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHO	D	
ent Sample ID: PZ-1						
ple #: 010 Date Sampled:	04/23/03 10:2	0 Date R	eceived:	04/24/03	Matrix:	WATER
olatile Organics by GC/MS						In Rev
Styrene	ND	1.0	ug/L	SW846	8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846	8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Benzene	ND	1.0	ug/L	SW846	8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846	8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846	8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846	8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846	8260B	
Ethylbenzene	ND	1.0	${\tt ug/L}$	SW846	8260B	
Methylene chloride	ND	1.0	ug/L	SW846	8260B	
Naphthalene	ND	1.0	ug/L	SW846	8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846	8260B	
Toluene	ND	1.0	ug/L	SW846	8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Trichloroethene	ND	1.0	ug/L	SW846	8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846	8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846	8260B	
Vinyl chloride	ND	1.0	ug/L	SW846	8260B	
Xylenes (total)	ND	1.0	ug/L	SW846	8260B	
norganic Analysis						Review
Alkalinity	130	5.0	mg/L	MC'Atm	310.1	VC A T C A
Chloride	12.8	1.0	mg/L		7 300.0A	
Nitrate as N	0.23	0.10	mg/L		300.0A	
Sulfate	5.5	1.0	mq/L		7 300.0A	
Total Organic Carbon	IN PROCESS	1	mg/L	MCAWN	7 415.1	
ent Sample ID: MW-14S						
4.	04/23/03 09:5	5 Date F	Received:	04/24/03	Matrix:	WATER
race Inductively Coupled Pla	sma (ICP) Meta	ls				Revie
Arsenic	ND	0.010	mg/L	SW846	6010B	
Cadmium	ND	0.0020	mg/L	SW846	6010B	

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PAGE 21

Lot #: A3D240294

ONALASKA LANDFILL Date Reported: 5/05/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
mal					
Client Sample ID: MW-14S	04/02/02 00 1			104/00 104	tan men
Sample #: 011 Date Sampled:	04/23/03 09:5	os Date Re	ceivea: 04	/24/03 Matrix:	WATER
Cobalt	0.0015 B	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
	->				
Inductively Coupled Plasma (IC			/-	grand 4 0 m	Reviewed
Barium	0.084 B	0.20	mg/L	SW846 6010B	
Iron	2.5	0.10	mg/L	SW846 6010B	
Manganese	0.83	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (Manua	l Cold-Vapor				Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.					1
Dissolved Gases in Water	M	1 0	/=		In Revie
Ethane	ND	1.0	ug/L	RSK SOP-175	
<b>77.1</b> 3	3.77		1-	DOTE	
Ethene	ND	1.0	ug/L	RSK SOP-175	
Ethene <b>Methane</b>	ND 430	1.0	ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175	
			· .		In Revie
Methane			· .		In Revie
Methane  Volatile Organics by GC/MS	430	1.0	ug/L	RSK SOP-175	In Revie
Methane  Volatile Organics by GC/MS  Bromomethane	<b>430</b> ND	1.0	ug/L	RSK SOP-175 SW846 8260B	In Revie
Methane  Volatile Organics by GC/MS  Bromomethane  Chloroethane	430 ND ND	1.0 1.0 1.0	ug/L ug/L ug/L	RSK SOP-175 SW846 8260B SW846 8260B	In Revie
Methane  Volatile Organics by GC/MS  Bromomethane  Chloroethane  Chloromethane	MD ND ND ND	1.0 1.0 1.0	ug/L ug/L ug/L ug/L	RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B	In Revi
Methane  Volatile Organics by GC/MS  Bromomethane Chloroethane Chloromethane Acetone	ND ND ND ND	1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revi
Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane	MD ND ND ND ND ND ND	1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revi
Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform	MD ND ND ND ND ND ND ND ND	1.0 1.0 1.0 1.0 10	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revi
Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND	1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revi
Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	MD ND	1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revi
Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	MD ND	1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revi
Wethane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	MD ND	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Wethane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane	MD ND	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B	In Revie
Wethane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform	MD ND	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B	In Revie
Wethane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane	MD ND	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B	In Revie

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change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

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Lot #: A3D240294

ONALASKA LANDFILL

Date Reported: 5/05/03

PARAMETER	RESULT	REPORTING	UNITS	ANALY: METHOI		<del></del>
Client Sample ID: MW-14S		,				
Sample #: 011 Date Sampled:	04/23/03 09:55	5 Date Re	eceived: 0	04/24/03 1	Matrix:	WATER
Volatile Organics by GC/MS						In Review
2-Hexanone	ND	10	ug/L	SW846	8260B	III KCVICW
4-Methyl-2-pentanone	ND	10	ug/L		8260B	
Styrene	ND	1.0	ug/L		8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L		8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L		8260B	
Benzene	ND	1.0	ug/L		8260B	
1,1-Dichloroethane	ND	1.0	ug/L		8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L		8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L		8260B	
1,1-Dichloroethene	ND	1.0	ug/L		8260B	
Ethylbenzene	ND	1.0	ug/L		8260B	
Methylene chloride	ND	1.0	ug/L		8260B	
Naphthalene	2.2	1.0	ug/L		8260B	
Tetrachloroethene	ND	1.0	ug/L		8260B	
Toluene	ND ND	1.0	ug/L		8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L ug/L		8260B	
Trichloroethene	ND ND	1.0	ug/L ug/L		8260B	
1,2,4-Trimethylbenzene	0.97 J	1.0	ug/L ug/L		8260B	
1,3,5-Trimethylbenzene	ND	1.0				
Vinyl chloride	ND	1.0	ug/L		8260B 8260B	
			ug/L			
Xylenes (total)	0.47 Ј	1.0	ug/L	SW846	8260B	
J Estimated result. Result is less than RL.						
Inorganic Analysis						Reviewed
Alkalinity	150	5.0	mg/L	MCAWW	310.1	
Chloride	5.4	1.0	mg/L	MCAWW	300.0A	
Nitrate as N	0.34	0.10	mg/L	MCAWW	300.0A	
Sulfate	5.4	1.0	mg/L	MCAWW	300.0A	
Total Organic Carbon	IN PROCESS	1	mg/L	MCAWW	415.1	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering PAGE 23 Lot #: A3D240294 ONALASKA LANDFILL Date Reported: 5/05/03 REPORTING ANALYTICAL METHOD PARAMETER RESULT LIMIT UNITS Client Sample ID: AW-09 Date Sampled: 04/23/03 09:40 Date Received: 04/24/03 Matrix: WATER Sample #: 012 Trace Inductively Coupled Plasma (ICP) Metals Reviewed SW846 6010B Arsenic 0.010 mg/L Cadmium ND 0.0020 mq/L SW846 6010B Cobalt ND 0.0070 mq/L SW846 6010B Lead ND 0.0030 mg/L SW846 6010B Vanadium 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.051 B 0.20 mq/L SW846 6010B Tron ND 0.10 mg/L SW846 6010B Manganese 0.016 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed Mercury 0.00020 mg/L SW846 7470A B. Estimated result. Result is less than RL. Dissolved Gases in Water In Review Ethane ND 1.0 ug/L RSK SOP-175 Ethene ND 1.0 ug/L RSK SOP-175 Methane 220 1.0 ug/L RSK SOP-175 Volatile Organics by GC/MS In Review Bromomethane ND 1.0 SW846 8260B ug/L Chloroethane ND 1.0 ug/L SW846 8260B Chloromethane ND 1.0 ug/L SW846 8260B ND Acetone 10 ug/L SW846 8260B Bromodichloromethane ND1.0 SW846 8260B ug/LBromoform ND 1.0 ug/L SW846 8260B 2-Butanone 1.0 ND ug/L SW846 8260B SW846 8260B Carbon disulfide ND1.0 uq/L Carbon tetrachloride SW846 8260B ND 1.0 uq/L Chlorobenzene ND 1.0 uq/L SW846 8260B SW846 8260B Dibromochloromethane ND 1.0 ug/L Chloroform SW846 8260B ND 1.0 ug/L

(Continued on next page)

1.0

ug/L

SW846 8260B

ND

1,2-Dichloroethane

The results shown below may still require additional laboratory review and are subject to

ENSI t #: A3D240294	ENSR Consulting & Engine 0294 ONALASKA LANDFILL		ering	Date Reported:		PAGE 24 5/05/03
		REPORT	ING	ANAL	TICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHO	)D	na consumer
Client Sample ID: AW-09						
Sample #: 012 Date Sampled:	04/23/03 09:4	0 Date	Received:	04/24/03	Matrix:	WATER
Volatile Organics by GC/MS						In Review
1,2-Dichloropropane	ND	1.0	ug/L	SW846	8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B	
2-Hexanone	ND	10	ug/L	SW846	8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846	8260B	
Styrene	ND	1.0	ug/L	SW846	8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846	8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Benzene	ND	1.0	ug/L	SW846	8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846	8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846	8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846	8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846	8260B	
Ethylbenzene	ND	1.0	ug/L	SW846	8260B	
Methylene chloride	0.34 J	1.0	ug/L	SW846	8260B	
Naphthalene	ND	1.0	ug/L	SW846	8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846	8260B	
Toluene	ND	1.0	ug/L	SW846	8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Trichloroethene	ND	1.0	ug/L	SW846	8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846	8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846	8260B	
Vinyl chloride	ND	1.0	ug/L	SW846	8260B	
Xylenes (total)	ND	1.0	ug/L	SW846	8260B	
J Estimated result. Result is less than RL.						
Inorganic Analysis						Reviewed
Alkalinity	170	5.0	mg/L	MCAW	¥ 310.1	
Chloride	3.0	1.0	mg/L		7 300.0A	
Nitrate as N	1.1	0.10	mg/L		7 300.0A	
Sulfate	3.1	1.0	mq/L		₹ 300.0A	
m / 1 o ' c '	*** ***					

(Continued on next page)

IN PROCESS 1

Total Organic Carbon

mg/L

MCAWW 415.1

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR t #: A3D240294	Consulting ONALASKA I	& Engineer: LANDFILL	ing	Date Reported:	PAGE 2 5/05/03
		REPORTING	3	ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: AW-1					
Sample #: 013 Date Sampled: 0	04/23/03 09:	00 Date Re	eceived: (	04/24/03 Matrix:	WATER
Trace Inductively Coupled Plass	na (ICP) Met	als			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (IC)	) Metals			•	Reviewed
Barium	0.13 B	0.20	mg/L	SW846 6010B	
Iron	0.39	0.10	mg/L	SW846 6010B	
Manganese	0.70	0.015	mg/L	SW846 6010B	
		,			T
Mercury in Liquid Waste (Manual					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.					
Dissolved Gases in Water					In Review
Ethane	ND	5.0	uq/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	690	5.0	ug/L	RSK SOP-175	
Volatile Organics by GC/MS					In Review
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENS Lot #: A3D240294	R Consulting & Engineering ONALASKA LANDFILL			Date Reporte	PAGE 26 ed: 5/05/03
		REPORT		ANALYTICAI	
PARAMETER	RESULT	LIMIT	<u>UNITS</u>	METHOD	<del> </del>
Client Sample ID: AW-1					
Sample #: 013 Date Sampled:	04/23/03	09:00 Date	e Received:	04/24/03 Matri	x: WATER
				, , ,	
Volatile Organics by GC/MS					In Review
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260	)B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260	)B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260	)B
2-Hexanone	ND	10	ug/L	SW846 8260	)B
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260	)B
Styrene	ND	1.0	ug/L	SW846 8260	)B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260	)B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260	)B
Benzene	ND	1.0	ug/L	SW846 8260	)B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260	)B
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260	)B
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260	)B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260	)B
Ethylbenzene	ND	1.0	ug/L	SW846 8260	)B
Methylene chloride	ND	1.0	ug/L	SW846 8260	)B
Naphthalene	ND	1.0	ug/L	SW846 8260	)B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260	)B
Toluene	ND	1.0	ug/L	SW846 8260	)B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260	)B
Trichloroethene	ND	1.0	ug/L	SW846 8260	)B
1,2,4-Trimethylbenzene	8.4	1.0	ug/L	SW846 8260	OB .
1,3,5-Trimethylbenzene	6.1	1.0	ug/L	SW846 8260	OB
Vinyl chloride	ND	1.0	ug/L	SW846 8260	)B
Xylenes (total)	4.7	1.0	ug/L	SW846 826	)B

Inorganic Analysis					
Alkalinity	210	5.0	mg/L	MCAWW	310.1
Chloride	5.6	1.0	mg/L	MCAWW	A0.00E
Nitrate as N	0.83	0.10	mg/L	MCAWW	300.0A
Sulfate	6.2	1.0	mg/L	MCAWW	A0.00E
Total Organic Carbon	IN PROCESS	1	mg/L	MCAWW	415.1

Reviewed

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lo

E t #: A3D240294	NSR Consulting ONALASKA L	_	ing	Date Reported:	PAGE 2 5/05/03
		REPORTING	1	ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Cample ID. MW 48					
<b>Client Sample ID: MW-4S</b> Sample #: 014 Date Sample	d: 04/22/03 12:	30 Date Re	eceived: 04	1/24/03 Matrix:	WATER
	, ,				
Trace Inductively Coupled P			_		Reviewed
Arsenic	0.0065 B	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma	(ICP) Metals				Reviewed
Barium	0.26	0.20	mq/L	SW846 6010B	
Iron	15.4	0.10	mg/L	SW846 6010B	
Manganese	1.8	0.015	mg/L	SW846 6010B	
Management of the Administration (Management of the Administration					70 l
Mercury in Liquid Waste (Ma Mercury	nuar Cord-vapor ND	0.00020	mg/L	SW846 7470A	Reviewed
B Estimated result, Result is less than RL.					
D Estimated result. Nestite 13 1633 than NE.					
Dissolved Gases in Water					In Review
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	1700	5.0	ug/L	202 202 222	
			-5/-2	RSK SOP-175	
			~g, ~	RSK SOP-175	
Volatile Organics by GC/MS					In Revie
Bromomethane	ND	29	ug/L	SW846 8260B	In Revie
Bromomethane Chloroethane	ND	29	ug/L ug/L	SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane	ND ND	29 29	ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone	ND ND	29 29 290	ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane	ND ND ND	29 29 290 29	ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform	ND ND ND ND	29 29 290 29	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND ND ND ND ND ND	29 29 290 29 29 29	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	ND ND ND ND ND ND ND	29 29 290 29 29 29	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND ND ND ND ND ND ND ND	29 29 290 29 29 290 29	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND ND ND ND ND ND ND	29 29 290 29 29 29	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane	ND	29 29 290 29 29 290 29 29	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie
Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND	29 29 290 29 29 290 29 29	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	In Revie

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering PAGE 28 Lot #: A3D240294 ONALASKA LANDFILL Date Reported: 5/05/03 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-4S Sample #: 014 Date Sampled: 04/22/03 12:30 Date Received: 04/24/03 Matrix: WATER Volatile Organics by GC/MS In Review 1,2-Dichloropropane ND ug/L SW846 8260B 29 cis-1,3-Dichloropropene ND 29 ug/L SW846 8260B trans-1,3-Dichloropropene 29 ug/L SW846 8260B 2-Hexanone ND 290 ug/L SW846 8260B 4-Methyl-2-pentanone ND 290 SW846 8260B ug/L ND 29 uq/L SW846 8260B Styrene 1,1,2,2-Tetrachloroethane ND 29 uq/L SW846 8260B 1,1,2-Trichloroethane SW846 8260B ND 29 ug/L Benzene ND 29 ug/L SW846 8260B 1,1-Dichloroethane ND 29 ug/L SW846 8260B cis-1,2-Dichloroethene ND ug/L SW846 8260B 14 trans-1,2-Dichloroethene ND 1.4 ug/L SW846 8260B 1,1-Dichloroethene ND 29 uq/L SW846 8260B Ethylbenzene 16 J 29 ug/L SW846 8260B Methylene chloride ND 29 ug/L SW846 8260B Naphthalene 14 J 29 ug/L SW846 8260B Tetrachloroethene ND 29 ug/L SW846 8260B ND Toluene 29 ug/L SW846 8260B 1,1,1-Trichloroethane ND 29 ug/L SW846 8260B Trichloroethene ND 29 uq/L SW846 8260B 1,2,4-Trimethylbenzene 780 29 uq/L SW846 8260B 1,3,5-Trimethylbenzene 170 29 ug/L SW846 8260B Vinyl chloride ND 29 ug/L SW846 8260B Xylenes (total) 54 29 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 260 5.0 mq/L MCAWW 310.1 Chloride 10 2 1.0 mq/L MCAWW 300.0A Nitrate as N ND 0.10 MCAWW 300.0A mg/L 0.22 B Sulfate 1..0 mq/L MCAWW 300.0A

Total Organic Carbon

(Continued on next page)

IN PROCESS 1

mq/L

MCAWW 415.1

B Estimated result. Result is less than RL,

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

#### ENSR Consulting & Engineering

PAGE 29

Lot #: A3D240294

ONALASKA LANDFILL

Date Reported: 5/05/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: AW-20					
Sample #: 015 Date Sampled: 04	/22/03 18:1	0 Date Rec	eived: 04/2	4/03 Matrix:	WATER
Trace Inductively Coupled Plasma	(TCP) Meta	lg			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	neviewed
Cadmium	ND	0.0020	mq/L	SW846 6010B	
Cobalt	0.011	0.0070	mq/L	SW846 6010B	
Lead	ND	0.0030	mq/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP)	Metals				Reviewed
Barium	0.24	0.20	mg/L	SW846 6010B	
Iron	7.0	0.10	mg/L	SW846 6010B	
Manganese	12.4	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (Manual	Cold-Vapor)				Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					In Review
Ethane	ND	10	ug/L	RSK SOP-175	
Ethene	ИĎ	10	ug/L	RSK SOP-175	
Methane	2300	10	ug/L	RSK SOP-175	
Volatile Organics by GC/MS			1-		In Review
Bromomethane	ND	15	ug/L	SW846 8260B	
Chloroethane	ND	15	ug/L	SW846 8260B	
Chloromethane	ND	15	ug/L	SW846 8260B	
Acetone	ND	150	ug/L	SW846 8260B	
Bromodichloromethane Bromoform	ND	15	ug/L	SW846 8260B	
2-Butanone	ND ND	15 150	ug/L	SW846 8260B	
z-Bucanone Carbon disulfide	ND ND		ug/L	SW846 8260B	
		15	ug/L	SW846 8260B	
Carbon tetrachloride Chlorobenzene	ND	15	ug/L	SW846 8260B	
Chloropenzene Dibromochloromethane	ND ND	15	ug/L	SW846 8260B	
Chloroform	ND ND	15 15	ug/L	SW846 8260B	
	ND		ug/L	SW846 8260B	
1,2-Dichloroethane		15	ug/L	SW846 8260B	
1,2-Dichloropropane	ИD	15	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ИD	15	ug/L	SW846 8260B	

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The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

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ENSR Consulting & Engineering

PAGE 30

ot #: A3D240294	ONALASKA LA	NDFILL		Date Re	ported:	5/05/03
PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALY METHO		
Client Sample ID: AW-20						
Sample #: 015 Date Sampled:	04/22/03 18:1	Date Red	ceived: 04	/24/03	Matrix:	WATER
Volatile Organics by GC/MS	•					In Review
trans-1,3-Dichloropropene	ND	15	ug/L	SW846	8260B	
2-Hexanone	ND	150	ug/L	SW846	8260B	
4-Methyl-2-pentanone	ND	150	ug/L	SW846	8260B	
Styrene	ND	15	ug/L	SW846	8260B	
1,1,2,2-Tetrachloroethane	ND	15	ug/L	SW846	8260B	
1,1,2-Trichloroethane	ND	15	ug/L	SW846	8260B	
Benzene	ND	15	ug/L		8260B	
1,1-Dichloroethane	ND	15	ug/L		8260B	
cis-1,2-Dichloroethene	ND	7.7	ug/L		8260B	
trans-1,2-Dichloroethene	ND	7.7	ug/L	SW846	8260B	
1,1-Dichloroethene	ND	15	ug/L		8260B	
Ethylbenzene	ND	15	ug/L		8260B	
Methylene chloride	ND	15	/٣		8260B	
Naphthalene	8.2 J	15	ug/L	SW846	8260B	
Tetrachloroethene	ND	15	ug/L		8260B	
Toluene	ND	15	ug/L		8260B	
1,1,1-Trichloroethane	ND	15	ug/L		8260B	
Trichloroethene	ND	15	ug/L		8260B	
1,2,4-Trimethylbenzene	450	15	ug/L		8260B	
1,3,5-Trimethylbenzene	200	15	ug/L		8260B	
Vinyl chloride	ND	15	ug/L		8260B	
Xylenes (total)	30	15	ug/L		8260B	
J Estimated result. Result is less than RL.						
Inorganic Analysis						Reviewed
Alkalinity	410	5.0	mg/L	MCAWW	310.1	
Chloride	7.8	1.0	mg/L	MCAWW	40.00 A	
Nitrate as N	2.2	0.10	mg/L	MCAWW	300.0A	
Sulfate	3.9	1.0	mg/L	MCAWW	A0.00E	
Total Organic Carbon	IN PROCESS	1.	mg/L	MCAWW	415.1	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

\_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A3D240294 ONALASKA LANDFILL 5/05/03 Date Reported: REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-20 DUP Sample #: 016 Date Sampled: 04/22/03 18:15 Date Received: 04/24/03 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed ND 0.010 mg/L SW846 6010B Cadmium 0.0020 mg/L SW846 6010B 0.0070 mq/L SW846 6010B Cobalt. 0.010 SW846 6010B Lead ND 0.0030 mg/L 0.0070 mq/L SW846 6010B Vanadium ND Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.23 0.20 mq/L SW846 6010B Iron 5.4 0.10 mq/L SW846 6010B SW846 6010B Manganese 11.8 0.015 mg/L Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed SW846 7470A Mercury 0.00020 mq/L Dissolved Gases in Water In Review Ethane ND 5.0 ug/L RSK SOP-175 Ethene ND 5.0 ug/L RSK SOP-175 RSK SOP-175 Methane 830 5.0 ug/L Volatile Organics by GC/MS In Review Bromomethane ND 15 uq/L SW846 8260B Chloroethane ND uq/L 15 SW846 8260B ND Chloromethane 15 ug/L SW846 8260B Acetone ND 150 ug/L SW846 8260B Bromodichloromethane ND 15 ug/L SW846 8260B ND 15 Bromoform ug/L SW846 8260B 2-Butanone ND150 ug/L SW846 8260B Carbon disulfide ND 15 ug/L SW846 8260B Carbon tetrachloride ND 15 ug/L SW846 8260B Chlorobenzene MD15 ug/L SW846 8260B Dibromochloromethane ND 15 uq/L SW846 8260B Chloroform ND 15 ug/L SW846 8260B 1,2-Dichloroethane ND 15 uq/L SW846 8260B

(Continued on next page)

15

15

uq/L

ug/L

SW846 8260B

SW846 8260B

ND

ND

1,2-Dichloropropane

cis-1,3-Dichloropropene

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

	R Consulting	_	ng		PAGE 32
Lot #: A3D240294	ONALASKA I	ANDFILL		Date Reported:	5/05/03
		REPORTING		ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: AW-20 DUP Sample #: 016 Date Sampled:	04/22/03 18:	15 Date Re	ceived:	04/24/03 Matrix:	WATER
Volatile Organics by GC/MS					In Review
trans-1,3-Dichloropropene	ND	15	ug/L	SW846 8260B	
2-Hexanone	ND	150	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	150	ug/L	SW846 8260B	
Styrene	ND	15	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	15	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	15	ug/L	SW846 8260B	
Benzene	ND	15	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	15	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	7.7	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	7.7	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	15	ug/L	SW846 8260B	
Ethylbenzene	ND	15	ug/L	SW846 8260B	
Methylene chloride	ND	15	ug/L	SW846 8260B	
Naphthalene	8.9 J	15	ug/L	SW846 8260B	
Tetrachloroethene	ND	15	ug/L	SW846 8260B	
Toluene	ND	15	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	15	ug/L	SW846 8260B	
Trichloroethene	ND	15	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	450	15	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	190	15	ug/L	SW846 8260B	
Vinyl chloride	ND	15	ug/L	SW846 8260B	
Xylenes (total)	28	15	ug/L	SW846 8260B	
J Estimated result. Result is less than RL.					
Inorganic Analysis			*		Reviewed
Alkalinity	400	5.0	mg/L	MCAWW 310.1	
Chloride	7.1	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	1.9	0.10	mg/L	MCAWW 300.0A	
Sulfate	3.9	1.0	mg/L	MCAWW 300.0A	1

(Continued on next page)

IN PROCESS 1

MCAWW 415.1

mg/L

Total Organic Carbon

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

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ENSR Consulting & Engineering

PAGE

#: A3D240294	ONALASKA L	_	3	Date Reported:	5/05/03
PARAMETER	RESULT	REPORTING	units	ANALYTICAL METHOD	
Client Sample ID: PZ-01 DUP Sample #: 017 Date Sample	d: 04/23/03 10:	00 Date Re	ceived: 04	1/24/03 Matrix:	WATER
Trace Inductively Coupled P.	lasma (TCP) Met	alg			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	Reviewed
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	0.0012 B	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma	(ICP) Metals				Reviewed
Barium	0.031 B	0.20	mg/L	SW846 6010B	
Iron	ND	0.10	mg/L	SW846 6010B	Sp.
Manganese	0.29	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (Ma	nual Cold-Vapor	)			Reviewed
Mercury  B Estimated result. Result is less than RL.	ND	0.00020	mg/L	SW846 7470A	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water  Ethane	ND	0.50	ug/L	SW846 7470A RSK SOP-175	In Review
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water			5.		In Review
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water  Ethane	ND ND 1.9	0.50	ug/L	RSK SOP-175	In Review
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene	ND ND	0.50 0.50	ug/L ug/L	RSK SOP-175 RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane	ND ND 1.9	0.50 0.50	ug/L ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS	ND ND 1.9	0.50 0.50 0.50	ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane	ND ND 1.9	0.50 0.50 0.50	ug/L ug/L <b>ug/L</b> ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane	ND ND 1.9 ND ND	0.50 0.50 0.50	ug/L ug/L <b>ug/L</b> ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane	ND ND 1.9 ND ND ND	0.50 0.50 0.50 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone	ND ND 1.9 ND ND ND ND ND ND ND	0.50 0.50 0.50 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane	ND ND 1.9  ND ND ND ND ND ND ND	0.50 0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform	ND	0.50 0.50 0.50 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND	0.50 0.50 0.50 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	ND N	0.50 0.50 0.50 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND ND 1.9  ND	0.50 0.50 0.50 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND ND 1.9  ND	0.50 0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	In Review

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A3D240294 ONALASKA LANDFILL Date Reported: 5/05/03 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-28 Date Sampled: 04/22/03 17:00 Date Received: 04/24/03 Matrix: WATER Sample #: 018 Volatile Organics by GC/MS In Review 1,2-Dichloropropane ND 2.0 ug/L SW846 8260B cis-1,3-Dichloropropene ND 2.0 SW846 8260B ug/L trans-1,3-Dichloropropene ND 2.0 SW846 8260B ug/L ND20 SW846 8260B 2-Hexanone ug/L 20 SW846 8260B 4-Methyl-2-pentanone ND ug/L Styrene ND 2.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 2.0 uq/L SW846 8260B 1,1,2-Trichloroethane ND 2.0 SW846 8260B ug/L ND Benzene 2.0 SW846 8260B ug/L 1,1-Dichloroethane ND 2.0 ug/L SW846 8260B cis-1,2-Dichloroethene 1.0 uq/L SW846 8260B trans-1,2-Dichloroethene ND1.0 ug/L SW846 8260B 1,1-Dichloroethene ND 2.0 uq/L SW846 8260B Ethylbenzene ND 2.0 uq/L SW846 8260B Methylene chloride ND 2.0 SW846 8260B ug/L ND Naphthalene 2.0 SW846 8260B ug/L Tetrachloroethene ND 2.0 ug/L SW846 8260B Toluene ND 2.0 ug/L SW846 8260B 1,1,1-Trichloroethane 2.0 SW846 8260B ND ug/L Trichloroethene ND2.0 ug/L SW846 8260B 1,2,4-Trimethylbenzene 44 2.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene 2.0 18 ug/L SW846 8260B Vinyl chloride ND 2.0 SW846 8260B ug/L Xylenes (total) 1.6 J 2.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 360 5.0 mg/L MCAWW 310.1 Chloride 14.0 1.0 mq/L MCAWW 300.0A Nitrate as N 1.7 0.10 MCAWW 300.0A mg/L Sulfate 2.7 1.0 mg/L MCAWW 300.0A

IN PROCESS 1

mg/L

MCAWW 415.1

Total Organic Carbon

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 ANALYTICAL REPORTING RESULT PARAMETER LIMIT UNITS METHOD Client Sample ID: MW-1M (128) Sample #: 001 Date Sampled: 12/11/02 13:10 Date Received: 12/13/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.014 0.010 mg/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt ND 0.0070 mg/L SW846 6010B 0.0030 Lead ND mg/L SW846 6010B Vanadium ND 0.0070 mg/L SW846 6010B Arsenic Dissolved 0.0024 B 0.010 mq/L SW846 6010B Cadmium Dissolved 0.00029 B 0.0020 mq/L SW846 6010B Cobalt Dissolved ND SW846 6010B 0.0070 mg/L Lead Dissolved ND 0.0030 mg/L SW846 6010B Vanadium Dissolved ND 0.0070 mq/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.32 0.20 mg/L SW846 6010B 8.7 Iron 0.10 mq/L SW846 6010B 1.7 0.015 Manganese mg/L SW846 6010B Dissolved 0.22 Barium 0.20 mg/L SW846 6010B Iron Dissolved 0.10 0.10 mg/L SW846 6010B Manganese Dissolved 1.5 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed Mercury 0.00020 mg/L SW846 7470A 0.00020 Mercury Dissolved 0.00011 B mg/L SW846 7470A B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 0.50 uq/L RSK SOP-175 Ethene ND 0.50 uq/L RSK SOP-175 9.9 Methane 0.50 ug/L RSK SOP-175 Volatile Organics by GC/MS Reviewed ug/L Benzene ND 1.0 SW846 8260B 1,1-Dichloroethane ND1.0 ug/L SW846 8260B cis-1,2-Dichloroethene ND 0.50 ug/L SW846 8260B

(Continued on next page)

0.50

uq/L

SW846 8260B

trans-1,2-Dichloroethene

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

#### ENSR Consulting & Engineering Lot #: A2L130219

PAGE 2

ONALASKA LANDFILL

Date Reported: 8/14/03

REPORTING

ANALYTICAL

Project Number: 00507

METHOD

PARAMETER RESULT LIMIT UNITS

Client Sample ID: MW-1M (128)

Sample #: 001 Date Sampled: 12/11/02 13:10 Date Received: 12/13/02 Matrix: WATER

Volatile Organics by GC/MS				R	eviewed
1,1-Dichloroethene	ND	1.0	$\mathtt{ug}/\mathtt{L}$	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	2.4	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	3.4 J	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Glad and language	NTD				
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0 1.0	ug/L ug/L	SW846 8260B SW846 8260B	
			=		
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane Chloroform	ND ND	1.0 1.0	ug/L ug/L	SW846 8260B SW846 8260B	
Dibromochloromethane Chloroform 1,2-Dichloroethane	ND ND ND	1.0 1.0 1.0	ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B	
Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane	ND ND ND	1.0 1.0 1.0	ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene	ND ND ND ND	1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene	ND ND ND ND ND	1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene 2-Hexanone	ND ND ND ND ND ND	1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene 2-Hexanone 4-Methyl-2-pentanone	ND ND ND ND ND ND ND ND ND	1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene 2-Hexanone 4-Methyl-2-pentanone Styrene	ND	1.0 1.0 1.0 1.0 1.0 1.0 10	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	

J Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

Reviewed

Lot #: A2L130219

ONALASKA LANDFILL Date Reported: 8/14/03

Project Number: 00507

REPORTING

ANALYTICAL

RESULT

LIMIT UNITS

METHOD

Client Sample ID: MW-1M (128)

Sample #: 001 Date Sampled: 12/11/02 13:10 Date Received: 12/13/02 Matrix: WATER

Inorganic Analysis				
Alkalinity	76	5.0	mg/L	MCAWW 310.1
Chloride	7.8	1.0	mg/L	MCAWW 300.0A
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A
Sulfate	5.2	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	Λ	1	mer/T.	MCNWW 415 1

Client Sample ID: MW-1S (116)

Sample #: 002 Date Sampled: 12/11/02 13:35 Date Received: 12/13/02 Matrix: WATER

Trace Inductively Co	oupled Plasma	(ICP) Meta	ls			Reviewed
Arsenic		0.0029 B	0.010	mg/L	SW846 6010B	
Cadmium		ND	0.0020	mg/L	SW846 6010B	
Cobalt		ND	0.0070	mg/L	SW846 6010B	
Lead		ND	0.0030	mg/L	SW846 6010B	
Vanadium		0.00088 B	0.0070	mg/L	SW846 6010B	
Arsenic	Dissolved	0.0030 B	0.010	mg/L	SW846 6010B	
Cadmium	Dissolved	0.00032 B	0.0020	mg/L	SW846 6010B	
Cobalt	Dissolved	0.00079 B	0.0070	mg/L	SW846 6010B	
Lead	Dissolved	ND	0.0030	mg/L	SW846 6010B	
Vanadium	Dissolved	0.00099 B	0.0070	mg/L	SW846 6010B	
Inductively Coupled	Plasma (ICP)	Metals				Reviewed
Barium		0.034 B	0.20	mg/L	SW846 6010B	
Iron		0.15	0.10	mg/L	SW846 6010B	
Manganese		0.86	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.027 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	0.053 B	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	0.34	0.015	mg/L	SW846 6010B	
Mercury in Liquid Wa	aste (Manual	Cold-Vapor)				Reviewed
Mercury		ND	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	ND	0.00020	mg/L	SW846 7470A	

B Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

#### ENSR Consulting & Engineering

PAGE

ONALASKA LANDFILL Lot #: A2L130219

Date Reported: 8/14/03

Project Number: 00507

REPORTING

ANALYTICAL

PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: MW-1S (116)

Sample #: 002 Date Sampled: 12/11/02 13:35 Date Received: 12/13/02 Matrix: WATER

Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	18	0.50	ug/L	RSK SOP-175	•
Volatile Organics by GC/MS					Reviewed
Benzene	ND	1.0	uq/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	2.4	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	3.7 J	10	$\mathbf{ug}/\mathbf{L}$	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-1S (116) Sample #: 002 Date Sampled: 12/11/02 13:35 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed cis-1,3-Dichloropropene ND 1.0 uq/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone 10 uq/L SW846 8260B ND 4-Methyl-2-pentanone ND 10 uq/L SW846 8260B ND 1.0 uq/L Styrene SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 120 5.0 mg/L MCAWW 310.1 Chloride 5.5 1.0 mg/L MCAWW 300.0A Nitrate as N 0.10 ND mg/L MCAWW 300.0A Sulfate 19.7 1.0 mg/L MCAWW 300.0A Total Organic Carbon mq/L MCAWW 415.1 1 Client Sample ID: PZ-02 (138) Sample #: 003 Date Sampled: 12/11/02 15:35 Date Received: 12/13/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.056 mq/L SW846 6010B 0.010 Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.011 0.0070 mg/L SW846 6010B Lead 0.0062 0.0030 mg/L SW846 6010B Vanadium 0.026 0.0070 mg/L SW846 6010B Arsenic Dissolved ND 0.010 mg/L SW846 6010B Cadmium Dissolved ND 0.0020 mg/L SW846 6010B Dissolved 0.0069 B Cobalt 0.0070 SW846 6010B mg/L Dissolved ND Lead 0.0030 mg/L SW846 6010B Dissolved ND Vanadium 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed mq/L SW846 6010B Barium 0.66 0.20

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ot #: A2L130219		onsulting & ONALASKA LA oject Numbe	NDFILL		Date Reported:	PAGE 8/14/03
PARAMETER		RESULT	LIMIT UNITS		METHOD	**************************************
Client Sample ID: PZ-0 Sample #: 003 Date		/11/02 15:39	5 Date Re	ceived: 1	2/13/02 Matrix:	WATER
Iron		98.8	0.10	mg/L	SW846 6010B	
Manganese		5.2	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.037 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	0.43	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	4.2	0.015	mg/L	SW846 6010B	
Mercury in Liquid Wa	ste (Manual	Cold-Vapor)				Reviewed
Mercury		0.00013 B	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	0.000092 B	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less tha	n RL.					
Dissolved Gases in W	later					Reviewed
Ethane		ND	1.0	ug/L	RSK SOP-175	
Ethene		ND	1.0	ug/L	RSK SOP-175	
Methane		98	1.0	ug/L	RSK SOP-175	
Volatile Organics by	GC/MS					Reviewed
Benzene		ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	<b>:</b>	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroet	hene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloro	ethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	<u> </u>	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene		ND	1.0	ug/L	SW846 8260B	
Methylene chloride	<u> </u>	2.4	1.0	ug/L	SW846 8260B	
Naphthalene		ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene		ND	1.0	ug/L	SW846 8260B	
Toluene		ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroeth	iane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene		ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylber	ızene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylber	ızene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride		ND	1.0	ug/L	SW846 8260B	
		NTD	1.0	ug/L	SW846 8260B	
Xylenes (total)		ND	1.0	ug/п	DW040 0200D	
Xylenes (total) Bromomethane		ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: PZ-02 (138) Date Sampled: 12/11/02 15:35 Date Received: 12/13/02 Matrix: WATER Sample #: 003 Volatile Organics by GC/MS Reviewed ug/L SW846 8260B Chloromethane ND 1.0 Acetone 2.6 J 10 ug/L SW846 8260B Bromodichloromethane ND 1.0 ug/L SW846 8260B Bromoform ND 1.0 ug/L SW846 8260B 10 SW846 8260B 2-Butanone ND ug/L Carbon disulfide ND 1.0 ug/L SW846 8260B Carbon tetrachloride 1.0 ND uq/L SW846 8260B Chlorobenzene ND 1.0 SW846 8260B ug/L Dibromochloromethane ND 1.0 ug/L SW846 8260B Chloroform ND 1.0 ug/L SW846 8260B 1,2-Dichloroethane ND 1.0 ug/L SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L SW846 8260B SW846 8260B cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 uq/L ND 10 ug/L SW846 8260B 2-Hexanone 4-Methyl-2-pentanone SW846 8260B ND 10 ug/L ND 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND1.0 uq/L SW846 8260B SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 160 5.0 mq/L MCAWW 310.1 Chloride 8.6 1.0 mg/L MCAWW 300.0A Nitrate as N ND 0.10 MCAWW 300.0A mg/L Sulfate 2.4 1.0 mq/L MCAWW 300.0A Total Organic Carbon 15 mg/L MCAWW 415.1 1 Client Sample ID: PZ-03 (139) Date Sampled: 12/11/02 16:10 Date Received: 12/13/02 Matrix: WATER Sample #: 004 Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.0038 B 0.010 mg/L SW846 6010B Arsenic

The results shown below may still require additional laboratory review and are subject to

t #: A2L130219		Onsulting & ONALASKA LA	NDFILL	ng	Date Reported:	PAGE 8/14/03
	Project Number: 00507					
			REPORTING	ł	ANALYTICAL	
PARAMETER		RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: PZ-03	(120)					
-		/11/02 16:10	O Date Re	ceived: 12	2/13/02 Matrix:	WATER
Cadmium		0.00099 B	0.0020	mg/L	SW846 6010B	
Cobalt		0.00033 B	0.0070	mg/L	SW846 6010B	
Lead		ND	0.0030	mg/L	SW846 6010B	
Vanadium		0.0028 B	0.0070	mg/L	SW846 6010B	
Arsenic	Dissolved		0.010	mg/L	SW846 6010B	
Cadmium	Dissolved		0.0020	mg/L	SW846 6010B	
Cobalt	Dissolved		0.0020	mg/L	SW846 6010B	
Lead	Dissolved	ND	0.0030	mg/L	SW846 6010B	
Vanadium	Dissolved	0.0015 B	0.0070	mg/L	SW846 6010B	
Inductively Coupled F	Plasma (ICP)			•		Reviewed
Barium		0.097 B	0.20	mg/L	SW846 6010B	
Iron			0.10	mg/L	SW846 6010B	
Manganese		2.7	0.015	mg/L	SW846 6010B	
Barium	Dissolved		0.20	mg/L	SW846 6010B	
Iron	Dissolved Dissolved	0.10	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	2.5	0.015	mg/L	SW846 6010B	
Mercury in Liquid Was	ste (Manual	_				Reviewed
Mercury		0.00012 B	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	0.000096 B	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than	RL.					
Dissolved Gases in Wa	ater			/		Reviewed
Ethane		ND	0.50	ug/L	RSK SOP-175	
Ethene		ND	0.50	ug/L	RSK SOP-175	
Methane		2.4	0.50	ug/L	RSK SOP-175	
Valatila Organiaa bu	GC/MS					Reviewed
Volatile Organics by		ND	1.0	ug/L	SW846 8260B	
Benzene						
		ND	1.0	ug/L	SW846 8260B	
Benzene	nene	ND ND	1.0 0.50	ug/L ug/L	SW846 8260B SW846 8260B	
Benzene 1,1-Dichloroethane				-		
Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth		ND	0.50	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: PZ-03 (139) Date Sampled: 12/11/02 16:10 Date Received: 12/13/02 Matrix: WATER Sample #: 004 Volatile Organics by GC/MS Reviewed Methylene chloride 2.5 1.0 ug/L SW846 8260B Naphthalene ND 1.0 uq/L SW846 8260B Tetrachloroethene ND 1.0 uq/L SW846 8260B Toluene ND 1.0 uq/L SW846 8260B 1,1,1-Trichloroethane ND1.0 uq/L SW846 8260B Trichloroethene ND 1.0 uq/L SW846 8260B 1,2,4-Trimethylbenzene ND 1.0 uq/L SW846 8260B 1,3,5-Trimethylbenzene ND 1.0 ug/L SW846 8260B Vinyl chloride ND1.0 ug/L SW846 8260B Xylenes (total) ND 1.0 ug/L SW846 8260B Bromomethane ND 1.0 ug/L SW846 8260B Chloroethane ND 1.0 ug/L SW846 8260B Chloromethane ND 1.0 ug/L SW846 8260B Acetone 3.1 J 10 ug/L SW846 8260B ND Bromodichloromethane 1.0 ug/L SW846 8260B Bromoform ND 1.0 ug/L SW846 8260B 2-Butanone 10 ug/L SW846 8260B Carbon disulfide ND 1.0 ug/L SW846 8260B Carbon tetrachloride ИD 1.0 ug/L SW846 8260B Chlorobenzene ND 1.0 ug/L SW846 8260B Dibromochloromethane ND 1.0 uq/L SW846 8260B Chloroform ND 1.0 ug/L SW846 8260B 1,2-Dichloroethane ND 1.0 ug/L SW846 8260B 1,2-Dichloropropane 1.0 ug/L SW846 8260B cis-1,3-Dichloropropene ND SW846 8260B 1.0 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ИD 10 ug/L SW846 8260B ND 1.0 Styrene ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed

(Continued on next page)

5.0

mq/L

MCAWW 310.1

160

Alkalinity

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 10 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: PZ-03 (139) Date Sampled: 12/11/02 16:10 Date Received: 12/13/02 Matrix: WATER Sample #: 004 Chloride Reviewed Chloride 6.3 1.0 mg/L MCAWW 300.0A 0.10 MCAWW 300.0A Nitrate as N ND mg/L mg/L Sulfate 1.2 1.0 MCAWW 300.0A Client Sample ID: MW-2M (118) Date Sampled: 12/11/02 17:05 Date Received: 12/13/02 Matrix: WATER Sample #: 005 Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.019 Arsenic 0.010 mq/L SW846 6010B Cadmium ND 0.0020 mq/L SW846 6010B Cobalt ND 0.0070 mg/L SW846 6010B ND SW846 6010B Lead 0.0030 mg/L Vanadium ND 0.0070 mg/L SW846 6010B Dissolved 0.0083 B Arsenic 0.010 mg/L SW846 6010B SW846 6010B Cadmium Dissolved ND 0.0020 mg/L Cobalt Dissolved ND 0.0070 SW846 6010B mg/L Lead Dissolved ND 0.0030 mg/L SW846 6010B Vanadium Dissolved ND 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed 0.37 0.20 mg/L SW846 6010B Barium Iron 5.0 0.10 mg/L SW846 6010B 0.41 0.015 SW846 6010B Manganese mg/L Barium Dissolved 0.28 0.20 mg/L SW846 6010B Iron Dissolved ND 0.10 mq/L SW846 6010B Manganese Dissolved 0.38 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed 0.000092 B 0.00020 Mercury mq/L SW846 7470A Mercury Dissolved 0.000087 B 0.00020 mq/L SW846 7470A B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 0.50 ug/L RSK SOP-175

11

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_

#### KNSR Consulting & Engineering PAGE ONALASKA LANDFILL Lot #: A2L130219 Date Reported: 8/14/03 Project Number: 00507

REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-2M (118) Sample #: 005 Date Sampled: 12/11/02 17:05 Date Received: 12/13/02 Matrix: WATER Dissolved Gases in Water Reviewed Ethene ND 0.50 ug/L RSK SOP-175 Methane 0.50 ug/L RSK SOP-175 22 Volatile Organics by GC/MS Reviewed Benzene ND 1.0 ug/L SW846 8260B 1,1-Dichloroethane ND 1.0 ug/L SW846 8260B cis-1,2-Dichloroethene 0.50 SW846 8260B ND uq/L trans-1,2-Dichloroethene ND 0.50 SW846 8260B ug/L 1,1-Dichloroethene ND 1.0 SW846 8260B ug/L Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride 3.1 1.0 ug/L SW846 8260B Naphthalene ND 1.0 SW846 8260B ug/L Tetrachloroethene ND 1.0 ug/L SW846 8260B Toluene ND SW846 8260B 1.0 ug/L SW846 8260B 1,1,1-Trichloroethane ND 1.0 ug/L Trichloroethene SW846 8260B ND 1.0 ug/L 1,2,4-Trimethylbenzene ND1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene ND 1.0 ug/L SW846 8260B Vinyl chloride ND SW846 8260B 1.0 ug/L Xylenes (total) ND1.0 SW846 8260B ug/L Bromomethane ND1.0 SW846 8260B ug/L Chloroethane ND 1.0 ug/L SW846 8260B SW846 8260B Chloromethane ND 1.0 ug/L Acetone 5.5 J 10 ug/L SW846 8260B Bromodichloromethane ND SW846 8260B 1.0 uq/L Bromoform ND 1.0 ug/L SW846 8260B 2-Butanone ND 10 SW846 8260B ug/L Carbon disulfide NDSW846 8260B 1.0 ug/L Carbon tetrachloride ND 1.0 ug/L SW846 8260B Chlorobenzene 1.0 SW846 8260B ND ug/L Dibromochloromethane ND 1.0 SW846 8260B ug/L Chloroform ND 1.0 SW846 8260B uq/L SW846 8260B 1,2-Dichloroethane ND1,0 ug/L 1,2-Dichloropropane ND 1.0 uq/L SW846 8260B cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B

(Continued on next page)

1.,0

ug/L

SW846 8260B

ND

trans-1,3-Dichloropropene

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 12 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-2M (118) Sample #: 005 Date Sampled: 12/11/02 17:05 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed ND ug/L SW846 8260B 2-Hexanone 10 4-Methyl-2-pentanone ug/L ND 10 SW846 8260B Styrene ND 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 uq/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 100 5.0 mg/L MCAWW 310.1 Chloride 4.8 1.0 mg/L MCAWW 300.0A Nitrate as N ND 0.10 mg/L MCAWW 300.0A Sulfate 0.13 B 1.0 MCAWW 300.0A mg/L Total Organic Carbon mg/L MCAWW 415.1 1 B Estimated result. Result is less than RL. Client Sample ID: MW-2S (117) Date Sampled: 12/11/02 17:20 Date Received: 12/13/02 Matrix: WATER Sample #: 006 Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.012 Arsenic 0.010 mg/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.0080 0.0070 SW846 6010B mq/L Lead 0.0030 mg/L SW846 6010B Vanadium 0.00084 B 0.0070 SW846 6010B mg/L Arsenic Dissolved ND 0.010 SW846 6010B mg/L SW846 6010B Cadmium Dissolved ND 0.0020 mg/L Dissolved 0.0014 B Cobalt SW846 6010B 0.0070 mg/L Dissolved ND Lead 0.0030 mg/L SW846 6010B Vanadium Dissolved ND 0.0070 SW846 6010B mq/L Inductively Coupled Plasma (ICP) Metals Reviewed

(Continued on next page)

0.20

mg/L

SW846 6010B

0.17 B

Barium

The results shown below may still require additional laboratory review and are subject to

t #: A2L130219		onsulting & ONALASKA LA oject Numbe	NDFILL r: 00507	_	Date Reported:	PAGE 1 8/14/03
PARAMETER		RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW	-2S (117)					
		/11/02 17:2	0 Date Re	ceived: 1	2/13/02 Matrix:	WATER
Iron		29.5	0.10	mg/L	SW846 6010B	
Manganese		1.9	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.13 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	14.0	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	1.9	0.015	mg/L	SW846 6010B	
Mercury in Liquid	Waste (Manual	Cold-Vapor)				Reviewed
Mercury		ND	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	0.00010 B	0.00020	mg/L	SW846 7470A	
Dissolved Gases in						Reviewed
Ethane Ethene Methane	Nacci	ND ND <b>520</b>	2.5 2.5 2.5	ug/L ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175 RSK SOP-1 <b>75</b>	Reviewed
Ethane Ethene	nacer	ND	2.5	-	RSK SOP-175	Reviewed
Ethane Ethene		ND	2.5	ug/L	RSK SOP-175	Reviewed
Ethane Ethene Methane  Volatile Organics Benzene	by GC/MS	ND	2.5	ug/L ug/L ug/L	RSK SOP-175	
Ethane Ethene Methane  Volatile Organics Benzene 1,1-Dichloroethan	by GC/MS ne	ND <b>520</b>	2.5 2.5	ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175	
Ethane Ethene Methane  Volatile Organics Renzene 1,1-Dichloroethancis-1,2-Dichloroe	by GC/MS ne ethene	ND 520 0.91 J ND ND	2.5 2.5 1.0 1.0 0.50	ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B	
Ethane Ethene Methane  Volatile Organics Benzene 1,1-Dichloroethan cis-1,2-Dichloroethan	by GC/MS ne ethene roethene	ND 520 0.91 J ND ND ND	2.5 2.5 1.0 1.0 0.50 0.50	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethane Ethene Methane  Volatile Organics Benzene 1,1-Dichloroethacis-1,2-Dichloroethacis-1,2-Dichloroethac1,1-Dichloroethe	by GC/MS ne ethene roethene	ND 520 0.91 J ND ND ND ND	2.5 2.5 1.0 1.0 0.50 0.50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethane Ethene Methane  Volatile Organics Benzene 1,1-Dichloroethan cis-1,2-Dichloroe trans-1,2-Dichloroethen Ethylbenzene	by GC/MS ne ethene roethene ne	ND 520 0.91 J ND ND ND ND ND ND ND ND	2.5 2.5 1.0 1.0 0.50 0.50 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethane Ethene Methane  Volatile Organics Benzene 1,1-Dichloroethancis-1,2-Dichloroethancis-1,2-Dichloroethene Ethylbenzene Methylene chlorid	by GC/MS ne ethene roethene ne	ND 520  0.91 J  ND ND ND ND ND ND ND ND ND 2.8	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethane Ethene Methane  Volatile Organics In the service of the ser	by GC/MS  ne ethene roethene ne  de	ND 520  0.91 J  ND 2.8 ND	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethane Ethene Methane  Volatile Organics I Benzene 1,1-Dichloroethancis-1,2-Dichloroethancis-1,2-Dichloroethene Ethylbenzene Methylene chlorie Naphthalene Tetrachloroethene	by GC/MS  ne ethene roethene ne  de	ND 520  0.91 J  ND 2.8 ND	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethane Ethene Methane  Volatile Organics I Benzene 1,1-Dichloroethancis-1,2-Dichloroethancis-1,2-Dichloroethene Ethylbenzene Methylene chlorie Naphthalene Tetrachloroethene Toluene	by GC/MS  ne ethene roethene ne  de	ND 520  0.91 J  ND N	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethane Ethene Methane  Volatile Organics I Benzene 1,1-Dichloroethancis-1,2-Dichloroethancis-1,2-Dichloroethene Ethylbenzene Methylene chlorio Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroee	by GC/MS  ne ethene roethene ne  de	ND 520  0.91 J  ND N	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175  SW846 8260B	
Ethane Ethene Methane  Volatile Organics in the service of the ser	by GC/MS  ne ethene roethene ne  de e	ND 520  0.91 J  ND N	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175  SW846 8260B	
Ethane Ethene Methane  Volatile Organics in the service of the ser	by GC/MS  ne ethene roethene ne  de  e thane	ND 520  0.91 J ND	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175  SW846 8260B	
Ethane Ethene Methane  Volatile Organics   Benzene 1,1-Dichloroethancis-1,2-Dichloroethene Ethylbenzene Methylene chloric Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroethene 1,2,4-Trimethylbe 1,3,5-Trimethylbe	by GC/MS  ne ethene roethene ne  de  e thane	ND 520  0.91 J  ND N	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175  SW846 8260B	
Ethane Ethene Methane  Volatile Organics   Benzene 1,1-Dichloroethancis-1,2-Dichloroethene Ethylbenzene Methylene chlorio Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroet Trichloroethene 1,2,4-Trimethylbe 1,3,5-Trimethylbe Vinyl chloride	by GC/MS  ne ethene roethene ne  de  e thane	ND 520  0.91 J  ND N	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175  SW846 8260B	
Ethane Ethene Methane  Volatile Organics   Benzene 1,1-Dichloroethancis-1,2-Dichloroethene Ethylbenzene Methylene chloric Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroethene 1,2,4-Trimethylbe 1,3,5-Trimethylbe	by GC/MS  ne ethene roethene ne  de  e thane	ND 520  0.91 J  ND N	2.5 2.5 1.0 1.0 0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175  SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE 14 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER LIMIT UNITS RESULT METHOD Client Sample ID: MW-2S (117) Date Sampled: 12/11/02 17:20 Date Received: 12/13/02 Matrix: WATER Sample #: 006 Volatile Organics by GC/MS Reviewed Chloromethane ND 1.0 ug/L SW846 8260B 10 SW846 8260B Acetone 3.8 J ug/L Bromodichloromethane ND 1.0 ug/L SW846 8260B Bromoform 1.0 uq/L SW846 8260B 2-Butanone ND 10 ug/L SW846 8260B Carbon disulfide NDSW846 8260B 1.0 ug/L Carbon tetrachloride ND1.0 uq/L SW846 8260B Chlorobenzene 19 1.0 ug/L SW846 8260B 1.0 ND Dibromochloromethane ug/L SW846 8260B Chloroform ND1.0 ug/L SW846 8260B 1,2-Dichloroethane ND1.0 ug/L SW846 8260B 1,2-Dichloropropane ND1.0 ug/L SW846 8260B SW846 8260B cis-1,3-Dichloropropene ND 1.0 ug/L trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND 10 ug/L SW846 8260B ND 10 SW846 8260B 4-Methyl-2-pentanone ug/L 1.0 ND ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 180 5.0 mq/L MCAWW 310.1 Chloride 26.1 1.0 mq/L MCAWW 300.0A Nitrate as N ND 0.10 mg/L MCAWW 300.0A Sulfate ND 1.0 mg/L MCAWW 300.0A Total Organic Carbon 6 1 mq/L MCAWW 415.1 Client Sample ID: MW-8S (124) Date Sampled: 12/11/02 19:00 Date Received: 12/13/02 Matrix: WATER Sample #: 007 Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.010 mg/L SW846 6010B

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

: #: A2L130219		Consulting & CONALASKA LA	NDFILL	ing	Date Reported:	PAGE 1 8/14/03
	PL	oject Numbe		ra.	ANIATUMTOAT	
D. D. T. L. (TODED)		D D G I I I	REPORTIN		ANALYTICAL	
PARAMETER		RESULT	LIMIT	UNITS	METHOD	
lient Sample ID:	MW-8S (124)					
•		/11/02 19:00	n Date R	eceived: 1	2/13/02 Matrix:	WATER
ampro (i. oo)	zaco oamproar ri	, 11, 01 15.0		.5552.754.	2,20,02	***************************************
Cadmium		ND	0.0020	mg/L	SW846 6010B	
Cobalt		ND	0.0070	mg/L	SW846 6010B	
Lead		ND	0.0030	mg/L	SW846 6010B	
Vanadium		ND	0.0070	mg/L	SW846 6010B	
Arsenic	Dissolved	ND	0.010	mg/L	SW846 6010B	
Cadmium	Dissolved	ND	0.0020	mg/L	SW846 6010B	
Cobalt	Dissolved	ND	0.0070	mg/L	SW846 6010B	
Lead	Dissolved	ND	0.0030	mg/L	SW846 6010B	
Vanadium	Dissolved	ND	0.0070	mg/L	SW846 6010B	
Inductively Cour	oled Plasma (ICP)	Metals				Reviewed
Barium	, , , , , , , , , , , , , , , , , , , ,	0.088 B	0.20	mg/L	SW846 6010B	
Iron		0.052 B	0.10	mg/L	SW846 6010B	
Manganese		0.59	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.081 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	ND	0.10	mg/L	SW846 6010B	
Manganese	Dissolved		0.015	mg/L	SW846 6010B	
Mercury in Liqui	id Waste (Manual	Cold-Vapor)				Reviewed
Mercury	ra madee (manaar	ND	0.00020	mg/L	SW846 7470A	Review
Mercury	Dissolved	0.000087 B		mg/L	SW846 7470A	
D. Estimated month Decide in	- Jane Maria Di					
B Estimated result. Result is	s less than RL.					
Dissolved Gases	in Water					Reviewed
Ethane		ND	0.50	ug/L	RSK SOP-175	112.20.00
Ethene		ND	0.50	ug/L	RSK SOP-175	
Methane		0.58	0.50	ug/L	RSK SOP-175	
· · · · · · · · · · · · · · · · · · ·		3.00	3.20	- <u>-</u> , -	1111 001 173	
Volatile Organio	cs by GC/MS					Reviewed
Benzene	<b>4</b> , ,	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroet	thane	ND	1.0	ug/L	SW846 8260B	
		ND	0.50	ug/L	SW846 8260B	
cis-1.2-Dichla						
cis-1,2-Dichlo trans-1,2-Dich						
cis-1,2-Dichlo trans-1,2-Dich 1,1-Dichloroet	hloroethene	ND ND	0.50	ug/L ug/L	SW846 8260B SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE ONALASKA LANDFILL 8/14/03 Lot #: A2L130219 Date Reported: Project Number: 00507 REPORTING ANALYTICAL PARAMETER METHOD RESULT LIMIT UNITS Client Sample ID: MW-8S (124) Sample #: 007 Date Sampled: 12/11/02 19:00 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Methylene chloride 2.6 1.0 uq/L SW846 8260B Naphthalene ND 1.0 ug/L SW846 8260B Tetrachloroethene ND 1.0 ug/L SW846 8260B SW846 8260B Toluene ND1.0 ug/L ND 1.0 uq/L SW846 8260B 1,1,1-Trichloroethane ND 1.0 uq/L SW846 8260B Trichloroethene 1,2,4-Trimethylbenzene ND 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene ND 1.0 ug/L SW846 8260B Vinyl chloride ND 1.0 ug/L SW846 8260B Xylenes (total) ND 1.0 ug/L SW846 8260B SW846 8260B Bromodichloromethane ND 1.0 ug/L ND 1.0 ug/L SW846 8260B Bromoform 2-Butanone ND 10 ug/L SW846 8260B Carbon disulfide ND SW846 8260B 1.0 ug/L Carbon tetrachloride ND1.0 ug/L SW846 8260B Chlorobenzene SW846 8260B 1.0 ug/L Dibromochloromethane ug/L SW846 8260B ND 1.0 SW846 8260B Chloroform 1.0 ug/L ND1,2-Dichloroethane ND1.0 ug/L SW846 8260B Bromomethane ND1.0 uq/L SW846 8260B SW846 8260B Chloroethane ND 1.0 ug/L ND SW846 8260B Chloromethane 1.0 ug/L 10 uq/L SW846 8260B Acetone 2.2 J 1.0 uq/L SW846 8260B 1,2-Dichloropropane ИD SW846 8260B cis-1,3-Dichloropropene ИD 1.0 ug/L trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B ND 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 uq/L SW846 8260B 1,1,2-Trichloroethane 1.0 ug/L SW846 8260B NDJ. Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 190 5.0 mq/L MCAWW 310.1

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-8S (124) Sample #: 007 Date Sampled: 12/11/02 19:00 Date Received: 12/13/02 Matrix: WATER Chloride Reviewed 1.0 mg/L MCAWW 300.0A Chloride 9.5 Nitrate as N 1.5 0.10 mq/L MCAWW 300.0A Sulfate 12.3 1.0 mq/L MCAWW 300.0A Total Organic Carbon 0.9 B 1 mq/L MCAWW 415.1 B Estimated result. Result is less than RL. Client Sample ID: MW-8M (125) Sample #: 008 Date Sampled: 12/11/02 19:10 Date Received: 12/13/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.010 mg/L SW846 6010B Cadmium ND 0.0020 mq/L SW846 6010B Cobalt ND 0.0070 mg/L SW846 6010B Lead ND 0.0030 mg/L SW846 6010B Vanadium 0.0070 mg/L SW846 6010B Arsenic Dissolved 0.0024 B 0.010 mq/L SW846 6010B Dissolved ND Cadmium 0.0020 mg/L SW846 6010B Cobalt Dissolved ND 0.0070 mg/L SW846 6010B Lead Dissolved ND 0.0030 mg/L SW846 6010B Dissolved ND 0.0070 mg/L SW846 6010B Vanadium Inductively Coupled Plasma (ICP) Metals Reviewed 0.68 0.20 mg/L SW846 6010B Barium ND SW846 6010B Iron 0.10 mg/L Manganese 2.7 0.015 mg/L SW846 6010B Barium Dissolved 0.66 0.20 mg/L SW846 6010B

Iron

Manganese

Mercury

Mercury

(Continued on next page)

0.000090 B 0.00020

0.10

0.015

mg/L

mg/L

mg/L

mq/L

SW846 6010B

SW846 6010B

SW846 7470A

SW846 7470A

Reviewed

Dissolved 0.000090 B 0.00020

Dissolved ND

Dissolved 2.5

Mercury in Liquid Waste (Manual Cold-Vapor)

B Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

PAGE

Lot #: A2L130219

ONALASKA LANDFILL

Date Reported: 8/14/03

Project Number: 00507

REPORTING

ANALYTICAL

PARAMETER

RESULT

LIMIT UNITS

METHOD

Client Sample ID: MW-8M (125)

Sample #: 008 Date Sampled: 12/11/02 19:10 Date Received: 12/13/02 Matrix: WATER

Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	2.0	0.50	$\mathbf{ug}/\mathbf{L}$	RSK SOP-175	
Volatile Organics by GC/MS					Reviewed
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	3.2	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	2.9 J	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to

t #: A2L130219		Consulting & ONALASKA LA	NDFILL r: 00507		Date Reported:	PAGE 20 8/14/03
PARAMETER		RESULT	REPORTING LIMIT UNITS		ANALYTICAL METHOD	
Client Sample ID: MW-12	S (126)					
		/11/02 18:2	0 Date Re	ceived: 12	2/13/02 Matrix:	WATER
Iron		ND	0.10	mg/L	SW846 6010B	
Manganese		0.0023 B	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.022 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	ND	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	ND	0.015	mg/L	SW846 6010B	
Mercury in Liquid Was	te (Manual	Cold-Vapor)				Reviewed
Mercury	, , , , , , , , , , , , , , , , , , , ,	ND	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	0.00013 B	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Wa Ethane Ethene Methane	ter	ND ND	0.50 0.50 0.50	ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175	Reviewed
Volatile Organics by	GC/MS					Reviewed
Benzene	,	ND	1.0	uq/L	SW846 8260B	1101201100
1,1-Dichloroethane		ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroeth	.ene	ND	0.50	ug/L	SW846 8260B	
			0 50	uq/L	SW846 8260B	
trans-1,2-Dichloroe	thene	ND	0.50			
·	thene	ND ND	1.0	٠.	SW846 8260B	
trans-1,2-Dichloroe 1,1-Dichloroethene Ethylbenzene	thene			ug/L	SW846 8260B SW846 8260B	
1,1-Dichloroethene	thene	ND	1.0	٠.		
1,1-Dichloroethene Ethylbenzene	thene	ND ND	1.0 1.0	ug/L ug/L	SW846 8260B	
1,1-Dichloroethene Ethylbenzene <b>Methylene chloride</b>	thene	ND ND 2.7	1.0 1.0 1.0	ug/L ug/L <b>ug/L</b>	SW846 8260B SW846 8260B	
1,1-Dichloroethene Ethylbenzene <b>Methylene chloride</b> Naphthalene	thene	ND ND 2.7 ND	1.0 1.0 1.0	ug/L ug/L <b>ug/L</b> ug/L	SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene		ND ND 2.7 ND ND	1.0 1.0 1.0 1.0	ug/L ug/L <b>ug/L</b> ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene		ND ND 2.7 ND ND ND	1.0 1.0 1.0 1.0 1.0	ug/L ug/L <b>ug/L</b> ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha	ne	ND ND 2.7 ND ND ND ND ND ND	1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha Trichloroethene	ne ene	ND ND 2.7 ND ND ND ND ND ND	1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha Trichloroethene 1,2,4-Trimethylbenz	ne ene	ND ND 2.7 ND	1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha Trichloroethene 1,2,4-Trimethylbenz 1,3,5-Trimethylbenz	ne ene	ND ND 2.7 ND	1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha Trichloroethene 1,2,4-Trimethylbenz 1,3,5-Trimethylbenz Vinyl chloride	ne ene	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE ONALASKA LANDFILL Lot #: A2L130219 Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-12S (126) Sample #: 009 Date Sampled: 12/11/02 18:20 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Chloromethane ND 1.0 ug/L SW846 8260B Acetone 3.0 J 10 uq/L SW846 8260B ug/L SW846 8260B Bromodichloromethane ND 1.0 Bromoform ND1.0 uq/L SW846 8260B 10 2-Butanone ND ug/L SW846 8260B Carbon disulfide ND 1.0 ug/L SW846 8260B Carbon tetrachloride ND 1.0 ug/L SW846 8260B Chlorobenzene ND 1.0 ug/L SW846 8260B Dibromochloromethane ND 1.0 ug/L SW846 8260B Chloroform 1.0 SW846 8260B ND ug/L SW846 8260B 1,2-Dichloroethane ND 1.0 ug/L SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L cis-1,3-Dichloropropene 1.0 ug/L SW846 8260B ND SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L 2-Hexanone ND 10 ug/L SW846 8260B SW846 8260B 4-Methyl-2-pentanone ND10 ug/L SW846 8260B ND 1.0 ug/L Styrene SW846 8260B 1,1,2,2-Tetrachloroethane 1.0 ug/L ND1,1,2-Trichloroethane ND 1.0 uq/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed mg/L MCAWW 310.1 Alkalinity 170 5.0 Chloride 24.3 1.0 mg/L MCAWW 300.0A Nitrate as N 1.6 0.10 mg/L MCAWW 300.0A 7.2 1.0 MCAWW 300.0A Sulfate mg/L Total Organic Carbon 1 1 mg/L MCAWW 415.1 Client Sample ID: MW-4S (120) Date Sampled: 12/12/02 09:30 Date Received: 12/13/02 Matrix: WATER Sample #: 010 Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.0089 B 0.010 mq/L SW846 6010B Arsenic

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-4S (120) Sample #: 010 Date Sampled: 12/12/02 09:30 Date Received: 12/13/02 Matrix: WATER Cadmium 0.0020 ND mq/L SW846 6010B Cobalt 0.0070 ND mg/L SW846 6010B Lead 0.0030 ND mg/L SW846 6010B Vanadium ND 0.0070 SW846 6010B mg/L Arsenic Dissolved 0.0028 B 0.010 mg/L SW846 6010B Cadmium Dissolved ND SW846 6010B 0.0020 mg/L Cobalt Dissolved ND 0.0070 mg/L SW846 6010B Lead Dissolved ND 0.0030 mq/L SW846 6010B 0.0070 Vanadium Dissolved ND mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed SW846 6010B Barium 0.20 mg/L Tron 16.9 0.10 mg/L SW846 6010B 2.1 SW846 6010B Manganese 0.015 mg/L Barium Dissolved 0.23 SW846 6010B 0.20 mg/L Dissolved 2.9 0.10 SW846 6010B Tron mg/L Dissolved 2.1 Manganese 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed Mercury mq/L SW846 7470A 0.00020 Mercury Dissolved 0.000088 B 0.00020 mg/L SW846 7470A B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 5.0 ug/L RSK SOP-175 Ethene ND 5.0 RSK SOP-175 uq/L Methane 1200 5.0 uq/L RSK SOP-175 Volatile Organics by GC/MS Reviewed 25 ug/L SW846 8260B Benzene ND 1,1-Dichloroethane ND 25 ug/L SW846 8260B cis-1,2-Dichloroethene ND12 ug/L SW846 8260B trans-1,2-Dichloroethene ND 1.2 ug/L SW846 8260B 1,1-Dichloroethene ND25 SW846 8260B

(Continued on next page)

25

10 J

Ethylbenzene

ug/L

uq/L

SW846 8260B

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE 23 ONALASKA LANDFILL Lot #: A2L130219 Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-4S (120) Sample #: 010 Date Sampled: 12/12/02 09:30 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed 25 ug/L SW846 8260B Methylene chloride NDNaphthalene 25 SW846 8260B ND ug/L Tetrachloroethene 25 ug/L SW846 8260B ND25 ug/L SW846 8260B Toluene ND 1,1,1-Trichloroethane ND 25 ug/L SW846 8260B SW846 8260B 25 Trichloroethene NDug/L 25 SW846 8260B 1,2,4-Trimethylbenzene 540 ug/L 1,3,5-Trimethylbenzene 25 SW846 8260B 120 uq/L Vinyl chloride ND 25 SW846 8260B ug/L 25 Xylenes (total) ug/L SW846 8260B 29 Chloromethane ND 25 ug/L SW846 8260B Bromomethane ND 25 ug/L SW846 8260B Chloroethane ND 25 ug/L SW846 8260B Acetone ND 250 ug/L SW846 8260B SW846 8260B Carbon disulfide ND 25 uq/L Chloroform ND 25 ug/L SW846 8260B 25 SW846 8260B 1,2-Dichloroethane ND ug/L 250 2-Butanone ND ug/L SW846 8260B 25 Carbon tetrachloride NDug/L SW846 8260B

Bromodichloromethane

1,2-Dichloropropane

Dibromochloromethane

4-Methyl-2-pentanone

Bromoform

2-Hexanone

Styrene

Chlorobenzene

1,1,2-Trichloroethane

cis-1,3-Dichloropropene

trans-1,3-Dichloropropene

1,1,2,2-Tetrachloroethane

Inorganic Analysis

Alkalinity

280

5.0

mg/L

MCAWW 310.1

25

25

25

25

25

25

25

250

250

25

25

25

ug/L

SW846 8260B SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

ND

J Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE 24 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-4S (120) Date Sampled: 12/12/02 09:30 Date Received: 12/13/02 Matrix: WATER Sample #: 010 Chloride Reviewed Chloride mq/L 13.5 1.0 MCAWW 300.0A Nitrate as N ND 0.10 mg/L MCAWW 300.0A Sulfate 0.98 B 1.0 mq/L MCAWW 300.0A mg/L MCAWW 415.1 Total Organic Carbon 7 B Estimated result. Result is less than RL. Client Sample ID: MW-4S DUP (120) Sample #: 011 Date Sampled: 12/12/02 09:35 Date Received: 12/13/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.0090 B 0.010 mg/L SW846 6010B ND Cadmium 0.0020 mq/L SW846 6010B ND 0.0070 Cobalt mg/L SW846 6010B ND 0.0030 mg/L SW846 6010B Lead Vanadium ND 0.0070 mg/L SW846 6010B Dissolved 0.0024 B Arsenic 0.010 mg/L SW846 6010B Dissolved 0.00029 B 0.0020 SW846 6010B mg/L Cadmium Dissolved 0.00095 B 0.0070 SW846 6010B Cobalt mg/L Dissolved ND 0.0030 SW846 6010B Lead mg/L Vanadium Dissolved ND 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed 0.20 mq/L SW846 6010B Barium 0.32 Tron 17.2 0.10 mq/L SW846 6010B SW846 6010B 2.1 0.015 mg/L Manganese Barium Dissolved 0.25 0.20 mg/L SW846 6010B Iron Dissolved 3.9 0.10 mg/L SW846 6010B Dissolved 2.0 0.015 mg/L SW846 6010B Manganese Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed SW846 7470A Mercury ND 0.00020 mg/L Mercury Dissolved 0.00018 B 0.00020 mg/L SW846 7470A

B . Estimated result. Result is less than  $RL_{\rm *}$ 

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

#### KNSR Consulting & Engineering

PAGE 25

Lot #: A2L130219

ONALASKA LANDFILL

Date Reported: 8/14/03

Project Number: 00507

REPORTING ANALYTICAL

PARAMETER

RESULT LIMIT UNITS

METHOD

Client Sample ID: MW-4S DUP (120)

Sample #: 011 Date Sampled: 12/12/02 09:35 Date Received: 12/13/02 Matrix: WATER

Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	750	5.0	ug/L	RSK SOP-175	
Volatile Organics by GC/MS					Reviewed
Benzene	ND	25	uq/L	SW846 8260B	
1,1-Dichloroethane	ND	25	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	12	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	12	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	25	ug/L	SW846 8260B	
Ethylbenzene	ND	25	ug/L	SW846 8260B	
Methylene chloride	ND	25	ug/L	SW846 8260B	
Naphthalene	ND	25	ug/L	SW846 8260B	
Tetrachloroethene	ND	25	ug/L	SW846 8260B	
Toluene	ND	25	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	25	ug/L	SW846 8260B	
Trichloroethene	ND	25	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	570	25	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	130	25	ug/L	SW846 8260B	
Vinyl chloride	ND	25	ug/L	SW846 8260B	
Xylenes (total)	27	25	ug/L	SW846 8260B	
Bromomethane	ND	25	${\tt ug/L}$	SW846 8260B	
Chloroethane	ND	25	ug/L	SW846 8260B	
Chloromethane	ND	25	ug/L	SW846 8260B	
Acetone	ND	250	ug/L	SW846 8260B	
Bromodichloromethane	ND	25	ug/L	SW846 8260B	
Bromoform	ND	25	ug/L	SW846 8260B	
2-Butanone	ND	250	ug/L	SW846 8260B	
Carbon disulfide	ND	25	ug/L	SW846 8260B	
Carbon tetrachloride	ND	25	ug/L	SW846 8260B	
Chlorobenzene	ND	25	ug/L	SW846 8260B	
Dibromochloromethane	ND	25	ug/L	SW846 8260B	
Chloroform	ND	25	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	25	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	25	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_ ENSR Consulting & Engineering PAGE 26 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL LIMIT UNITS RESULT METHOD Client Sample ID: MW-4S DUP (120) Sample #: 011 Date Sampled: 12/12/02 09:35 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed cis-1,3-Dichloropropene 25 ug/L SW846 8260B ND trans-1,3-Dichloropropene ND 25 ug/L SW846 8260B 2-Hexanone ND 250 ug/L SW846 8260B 4-Methyl-2-pentanone ND 250 ug/L SW846 8260B ND 25 ug/L SW846 8260B Styrene 1,1,2,2-Tetrachloroethane ND 25 ug/L SW846 8260B 1,1,2-Trichloroethane ND 25 ug/L SW846 8260B Inorganic Analysis Reviewed Alkalinity 280 5.0 mg/L MCAWW 310.1 Chloride 13.5 1.0 mg/L MCAWW 300.0A Nitrate as N ND 0.10 mg/L MCAWW 300.0A 0.92 B Sulfate 1.0 mq/L MCAWW 300.0A MCAWW 415.1 Total Organic Carbon 1 mg/L B Estimated result. Result is less than RL. Client Sample ID: MW-15M (137) Date Sampled: 12/12/02 11:10 Date Received: 12/13/02 Matrix: WATER Sample #: 012 Trace Inductively Coupled Plasma (ICP) Metals Reviewed mg/L Arsenic 0.0054 B 0.010 SW846 6010B Cadmium 0.00031 B 0.0020 mq/L SW846 6010B Cobalt 0.0012 B 0.0070 mg/L SW846 6010B Lead 0.0049 0.0030 mg/L SW846 6010B Vanadium 0.0070 mg/L SW846 6010B Dissolved ND 0.010 mg/L SW846 6010B Arsenic Dissolved ND Cadmium 0.0020 mq/L SW846 6010B Dissolved 0.00082 B 0.0070 SW846 6010B Cobalt mq/L Dissolved ND SW846 6010B 0.0030 mg/L Lead SW846 6010B Dissolved ND mg/L Vanadium 0.0070 Inductively Coupled Plasma (ICP) Metals Reviewed

(Continued on next page)

0.20

0.86

Barium

mg/L

SW846 6010B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 27 ONALASKA LANDFILL Lot #: A2L130219 Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL LIMIT UNITS PARAMETER RESULT METHOD Client Sample ID: MW-15M (137) Sample #: 012 Date Sampled: 12/12/02 11:10 Date Received: 12/13/02 Matrix: WATER Iron 1.1 0.10 mg/L SW846 6010B Manganese 3.6 0.015 mg/L SW846 6010B Barium Dissolved 0.84 0.20 mg/L SW846 6010B Iron Dissolved ND 0.10 mg/L SW846 6010B Manganese Dissolved 3.6 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed Mercury 0.000092 B 0.00020 mq/L SW846 7470A Mercury Dissolved 0.000095 B 0.00020 mg/L SW846 7470A B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane 0.50 uq/L RSK SOP-175 ND Ethene ND 0.50 ug/L RSK SOP-175 Methane 0.50 RSK SOP-175 12 ug/L Volatile Organics by GC/MS Reviewed Benzene ND 1.0 ug/L SW846 8260B 1,1-Dichloroethane 1.0 1.0 ug/L SW846 8260B cis-1,2-Dichloroethene 0.56 0.50 ug/L SW846 8260B trans-1,2-Dichloroethene ND 0.50 ug/L SW846 8260B 1,1-Dichloroethene ND 1.0 ug/L SW846 8260B Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride 3.0 1.0 ug/L SW846 8260B Naphthalene ND 1.0 ug/L SW846 8260B Tetrachloroethene ND 1.0 SW846 8260B ug/L Toluene ND 1.0 ug/L SW846 8260B 1,1,1-Trichloroethane ND 1.0 ug/L SW846 8260B Trichloroethene ND 1.0 uq/L SW846 8260B SW846 8260B 1,2,4-Trimethylbenzene ND1.0 ug/L 1,3,5-Trimethylbenzene SW846 8260B ND1.0 uq/L Vinyl chloride ИD 1.0 ug/L SW846 8260B Xylenes (total) ND1.0 ug/L SW846 8260B Bromomethane ND 1.0 ug/L SW846 8260B Chloroethane ND 1.0 ug/L SW846 8260B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-15M (137) Sample #: 012 Date Sampled: 12/12/02 11:10 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Chloromethane ND 1.0 ug/L SW846 8260B Acetone ND 10 ug/L SW846 8260B Bromodichloromethane ND 1.0 ug/L SW846 8260B ND 1.0 SW846 8260B Bromoform ug/L 2-Butanone ND 10 ug/L SW846 8260B Carbon disulfide 1.0 ug/L SW846 8260B SW846 8260B Carbon tetrachloride ND 1.0 ug/L Chlorobenzene ND ug/L SW846 8260B 1.0 Dibromochloromethane ND 1.0 ug/L SW846 8260B Chloroform ND 1.0 ug/L SW846 8260B 1,2-Dichloroethane ND 1.0 ug/L SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L SW846 8260B cis-1,3-Dichloropropene SW846 8260B ND1.0 uq/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND10 ug/L 4-Methyl-2-pentanone ND10 ug/L SW846 8260B Styrene ND1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane SW846 8260B ND 1.0 ug/L Inorganic Analysis Reviewed Alkalinity 240 mq/L 5.0 MCAWW 310.1 Chloride 5.2 1.0 mq/L MCAWW 300.0A Nitrate as N 0.030 B 0.10 mg/L MCAWW 300.0A 1.0 Sulfate 2.4 mg/L MCAWW 300.0A Total Organic Carbon 3 1 mg/L MCAWW 415.1 B Estimated result. Result is less than RL. Client Sample ID: MW-6M (123) Sample #: 013 Date Sampled: 12/12/02 12:05 Date Received: 12/13/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.0024 B 0.010 mg/L SW846 6010B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

		onsulting &	-	ing	Data Damantal	PAGE 2
t #: A2L130219		ONALASKA LA			Date Reported:	8/14/03
	Pr	oject Numbe		7	TAINT VIIIT CINT	
рарамешер		DEGIII M	REPORTING		ANALYTICAL	
PARAMETER		RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: M	W-6M (123)					
Sample #: 013 D	ate Sampled: 12	/12/02 12:0	5 Date Re	eceived: 1	2/13/02 Matrix:	WATER
Cadmium		ND	0.0020	mg/L	SW846 6010B	
Cobalt		ND	0.0070	mg/L	SW846 6010B	
Lead		ND	0.0030	mg/L	SW846 6010B	
Vanadium		ND	0.0070	mg/L	SW846 6010B	
Arsenic	Dissolved	0.0034 B	0.010	mg/L	SW846 6010B	
Cadmium	Dissolved	ND	0.0020	mg/L	SW846 6010B	
Cobalt	Dissolved	0.00078 B	0.0070	mg/L	SW846 6010B	
Lead	Dissolved	ND	0.0030	mg/L	SW846 6010B	
Vanadium	Dissolved		0.0070	mg/L	SW846 6010B	
Inductively Coupl	ed Dlagma (TCD)	Matala				Reviewed
Barium	.eu riasma (icr)	0.75	0.20	mq/L	SW846 6010B	Kentemed
Iron		ND	0.10	mg/L	SW846 6010B	
		1.7	0.10		SW846 6010B	
Manganese Barium	Dissolved	0.71	0.015	mg/L	SW846 6010B	
Iron	Dissolved	ND	0.20	<b>mg/L</b> mg/L	SW846 6010B	
Manganese	Dissolved		0.10	mg/L	SW846 6010B	
W	) Managara (Managara)	G-1-3 1/\				D 3
Mercury in Liquid	i waste (Manual				00046 04003	Reviewed
Mercury	_, _	0.000097 B		mg/L	SW846 7470A	
Mercury	Dissolved	0.000090 B	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is le	ess than RL.					
Dissolved Gases i	n Water					Reviewed
Ethane		ND	0.50	ug/L	RSK SOP-175	
Ethene		ND	0.50	ug/L	RSK SOP-175	
Methane		1.1	0.50	ug/L	RSK SOP-175	
						_
Volatile Organics	by GC/MS					Reviewed
Benzene		ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroeth		ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichlor		ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichl		ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroeth	nene	ND	1.0	ug/L	SW846 8260B	
,						

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

#: A2L130219	R Consulting & Engineering ONALASKA LANDFILL Project Number: 00507 REPORTING			Date Reported	PAGE 3: 8/14/03
PARAMETER	RESULT	LIMIT	UNITS_	METHOD	
lient Sample ID: MW-6M (123)					
ample #: 013 Date Sampled:	12/12/02 12:0	)5 Date R	eceived:	12/13/02 Matrix	: WATER
Volatile Organics by GC/MS					Reviewed
Methylene chloride	2.1	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	2.1 J	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
J Estimated result. Result is less than RL.					

(Continued on next page)

5.0

mg/L

MCAWW 310.1

100

Alkalinity

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 31 Lot #: A2L130219 Date Reported: 8/14/03 ONALASKA LANDFILL Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-6M (123) Sample #: 013 Date Sampled: 12/12/02 12:05 Date Received: 12/13/02 Matrix: WATER

Chloride Reviewed 6.0 1.0 Chloride MCAWW 300.0A mg/L Nitrate as N ND 0.10 MCAWW 300.0A mg/L 0.42 B 1.0 Sulfate mg/L MCAWW 300.0A Total Organic Carbon 4 1 mg/L MCAWW 415.1

Client Sample ID: MW-6S (122)

Sample #: 014 Date Sampled: 12/12/02 12:20 Date Received: 12/13/02 Matrix: WATER

Arsenic         ND         0.010         mg/L         SW846         6010B           Cadmium         ND         0.0020         mg/L         SW846         6010B           Cobalt         0.0022 B         0.0070         mg/L         SW846         6010B           Lead         ND         0.0030         mg/L         SW846         6010B           Vanadium         ND         0.0070         mg/L         SW846         6010B           Arsenic         Dissolved         ND         0.010         mg/L         SW846         6010B
Cobalt         0.0022 B         0.0070 mg/L         SW846 6010B           Lead         ND         0.0030 mg/L         SW846 6010B           Vanadium         ND         0.0070 mg/L         SW846 6010B
Lead         ND         0.0030         mg/L         SW846 6010B           Vanadium         ND         0.0070         mg/L         SW846 6010B
Vanadium ND 0.0070 mg/L SW846 6010B
<b>—</b> ·
Arsenic Dissolved ND 0.010 mg/L SW846 6010B
Cadmium Dissolved ND 0.0020 mg/L SW846 6010B
Cobalt Dissolved 0.0013 B 0.0070 mg/L SW846 6010B
Lead Dissolved ND 0.0030 mg/L SW846 6010B
Vanadium Dissolved ND 0.0070 mg/L SW846 6010B
Inductively Coupled Plasma (ICP) Metals Reviewed
Barium 0.17 B 0.20 mg/L SW846 6010B
Iron 0.065 B 0.10 mg/L SW846 6010B
Manganese 2.7 0.015 mg/L SW846 6010B
Barium Dissolved 0.13 B 0.20 mg/L SW846 6010B
Iron Dissolved ND 0.10 mg/L SW846 6010B
Manganese Dissolved 1.6 0.015 mg/L SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed
Mercury ND 0.00020 mg/L SW846 7470A
Mercury Dissolved 0.000090 B 0.00020 mg/L SW846 7470A

B Estimated result. Result is less than RL.

B Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

#### KNSR Consulting & Engineering

PAGE 32

Lot #: A2L130219

ONALASKA LANDFILL

Date Reported: 8/14/03

Project Number: 00507

REPORTING

ANALYTICAL

PARAMETER

RESULT LIMIT UNITS

METHOD

Client Sample ID: MW-6S (122)

Sample #: 014 Date Sampled: 12/12/02 12:20 Date Received: 12/13/02 Matrix: WATER

Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	2.9	0.50	ug/L	RSK SOP-175	
Volatile Organics by GC/MS					Reviewed
Benzene	ND	1.0	uq/L	SW846 8260B	Kerlewed
1,1-Dichloroethane	0.55 J	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	2.2	1.0	ug/L <b>ug/L</b>	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	<b>.</b>	SW846 8260B	
Toluene	ND ND		ug/L		
		1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	2.6 J	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
* *					

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 33 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER LIMIT UNITS RESULT METHOD Client Sample ID: MW-6S (122) Sample #: 014 Date Sampled: 12/12/02 12:20 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B trans-1,3-Dichloropropene NDSW846 8260B 1.0 ug/L 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ND SW846 8260B 10 ug/L ND 1.0 SW846 8260B Styrene ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 160 5.0 mg/L MCAWW 310.1 Chloride 6.7 1.0 mg/L MCAWW 300.0A Nitrate as N ND 0.10 mg/L MCAWW 300.0A 4.0 1.0 mg/L Sulfate MCAWW 300.0A Total Organic Carbon 6 1 MCAWW 415.1 mg/L Client Sample ID: PZ-4 (140) Sample #: 015 Date Sampled: 12/12/02 13:00 Date Received: 12/13/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic ND 0.010 mg/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.0010 B 0.0070 mg/L SW846 6010B Lead ND 0.0030 mg/L SW846 6010B Vanadium ND0.0070 mg/L SW846 6010B Arsenic Dissolved ND 0.010 mg/L SW846 6010B Cadmium Dissolved ND 0.0020 mg/L SW846 6010B Cobalt Dissolved ND 0.0070 mg/L SW846 6010B Lead Dissolved 0.0016 B 0.0030 mg/L SW846 6010B Vanadium Dissolved ND 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.12 B mq/L SW846 6010B 0.20

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ot #. 321120210	ENSR C	onsulting & ONALASKA LA	~	.ng	Data Danawtad.	PAGE 3
ot #: A2L130219	Dr	oject Number			Date Reported:	8/14/03
	PI	Oject Number	REPORTING	1	ANALYTICAL	
PARAMETER		RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: PZ-4						
Sample #: 015 Date	Sampled: 12	/12/02 13:00	) Date Re	ceived: 1	2/13/02 Matrix:	WATER
Iron		ND	0.10	mg/L	SW846 6010B	
Manganese		2.6	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.063 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	ND	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	1.3	0.015	mg/L	SW846 6010B	
Mercury in Liquid Was	ste (Manua)	Cold-Vanor)				Reviewed
Mercury	see (manaar	0.000088 B	0 00020	mg/L	SW846 7470A	Keviewed
Mercury	Dissolved	0.000090 B		mg/L	SW846 7470A	
B Estimated result. Result is less than	RL.					
					*	
Dissolved Gases in Wa	ater					Reviewed
Ethane		ND	0.50	ug/L	RSK SOP-175	
Ethene		ND	0.50	ug/L	RSK SOP-175	
Methane		ND	0.50	ug/L	RSK SOP-175	
Volatile Organics by	GC/MS					Reviewed
Benzene		ND	1.0	ug/L	SW846 8260B	
Benzene 1,1-Dichloroethane		ND ND	1.0	ug/L ug/L	SW846 8260B SW846 8260B	
	iene					
1,1-Dichloroethane		ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth		ND ND	1.0 0.50	ug/L ug/L	SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroe		ND ND	1.0 0.50 0.50	ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroe 1,1-Dichloroethene		ND ND ND	1.0 0.50 0.50 1.0	ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroe 1,1-Dichloroethene Ethylbenzene		ND ND ND ND	1.0 0.50 0.50 1.0	ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroethene Ethylbenzene Methylene chloride		ND ND ND ND ND 2.6	1.0 0.50 0.50 1.0 1.0	ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroe 1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene		ND ND ND ND ND ND ND ND	1.0 0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroethene 1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene	ethene	ND ND ND ND ND ND ND 2.6 ND ND	1.0 0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroethene 1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene	ethene	ND ND ND ND ND ND D ND ND ND ND ND ND	1.0 0.50 0.50 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroet 1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha	ethene ane	ND N	1.0 0.50 0.50 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroet 1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha	ethene ane zene	ND ND ND ND O ND	1.0 0.50 0.50 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroet 1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha Trichloroethene 1,2,4-Trimethylbenz	ethene ane zene	ND ND ND ND 2.6 ND	1.0 0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroet 1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha Trichloroethene 1,2,4-Trimethylbena 1,3,5-Trimethylbena	ethene ane zene	ND ND ND ND 2.6 ND	1.0 0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B	
1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth 1,1-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroetha Trichloroethene 1,2,4-Trimethylbenz 1,3,5-Trimethylbenz Vinyl chloride	ethene ane zene	ND ND ND ND 2.6 ND	1.0 0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER METHOD \_\_ RESULT LIMIT UNITS Client Sample ID: PZ-4 (140) Sample #: 015 Date Sampled: 12/12/02 13:00 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed 1.0 SW846 8260B Chloromethane ND ug/L Acetone 3.5 J 10 uq/L SW846 8260B Bromodichloromethane 1.0 uq/L SW846 8260B Bromoform ИD 1.0 uq/L SW846 8260B 2-Butanone ND 10 uq/L SW846 8260B Carbon disulfide ND 1.0 uq/L SW846 8260B Carbon tetrachloride ND 1.0 ug/L SW846 8260B Chlorobenzene ND 1.0 ug/L SW846 8260B Dibromochloromethane ND1.0 ug/L SW846 8260B Chloroform ND 1.0 ug/L SW846 8260B 1,2-Dichloroethane ND 1.0 ug/L SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L SW846 8260B cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B Styrene ND 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 130 5.0 mq/L MCAWW 310.1 Chloride 5.5 1.0 mg/L MCAWW 300.0A Nitrate as N ND0.10 mg/L MCAWW 300.0A Sulfate 4.2 1.0 mg/L MCAWW 300.0A Total Organic Carbon MCAWW 415.1 1 mg/L Client Sample ID: PZ-5 (130) Date Sampled: 12/12/02 10:25 Date Received: 12/13/02 Matrix: WATER Sample #: 016 Trace Inductively Coupled Plasma (ICP) Metals Reviewed

(Continued on next page)

0.010

mg/L SW846 6010B

ND

Arsenic

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

t #: A2L130219		Consulting & ONALASKA LA	NDFILL	ing	Date Reported:	PAGE 3
	Pr	oject Numbe				
		REPORTING			ANALYTICAL	
PARAMETER		RESULT	LIMIT	UNITS	METHOD	
	()					
Client Sample ID: I		/40/00 40 0			0 (0 0 10 0 0 0 0 1	
Sample #: 016 I	Date Sampled: 12	/12/02 10:2	5 Date Re	eceived: 1	2/13/02 Matrix:	WATER
Cadmium		ND	0.0020	mg/L	SW846 6010B	
Cobalt		ND	0.0070	mg/L	SW846 6010B	
Lead		ND	0.0030	mg/L	SW846 6010B	
Vanadium		0.0011 B	0.0070	mg/L	SW846 6010B	
Arsenic	Dissolved	ND	0.010	mg/L	SW846 6010B	
Cadmium	Dissolved	ND	0.0020	mg/L	SW846 6010B	
Cobalt	Dissolved	ND	0.0020	mg/L	SW846 6010B	
Lead	Dissolved		0.0030	mg/L	SW846 6010B	
Vanadium	Dissolved	0.00078 B	0.0070	mg/L	SW846 6010B	
Inductively Coup	led Plasma (ICP)	Metals				Reviewed
Barium		0.091 B	0.20	mg/L	SW846 6010B	
Iron		0.13	0.10	mg/L	SW846 6010B	
Manganese		0.18	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.086 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	ND	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	0.080	0.015	mg/L	SW846 6010B	
Mercury in Liquio	d Waste (Manual	Cold-Vapor)				Reviewed
Mercury		0.000098 B	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	0.00011 B	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is I	ass than Di					
b Estimated result. Result is a	css than IVE.					
Dissolved Gases :	in Water					Reviewed
Ethane		ND	1.0	ug/L	RSK SOP-175	
Ethene		ND	1.0	ug/L	RSK SOP-175	
Methane		130	1.0	ug/L	RSK SOP-175	
	,					
Volatile Organics	s by GC/MS			,		Reviewed
Benzene		ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroeth		ИD	1.0	ug/L	SW846 8260B	
cis-1,2-Dichlor		ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichl		ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroeth	nene	ИD	1.0	ug/L	SW846 8260B	
Ethylbenzene		ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 38

		, ,	_
A2L130219	ONALASKA	LANDFILL	

Lot #: A

Date Reported: 8/14/03

Project Number: 00507

REPORTING

ANALYTICAL

PARAMETER LIMIT UNITS METHOD RESULT

Client Sample ID: PZ-5 (130)

Sample #: 016 Date Sampled: 12/12/02 10:25 Date Received: 12/13/02 Matrix: WATER

Chloride Reviewed 1.0 Chloride 9.7 MCAWW 300.0A mg/L Nitrate as N 0.48 mg/L MCAWW 300.0A mg/L Sulfate 5.7 MCAWW 300.0A Total Organic Carbon mg/L MCAWW 415.1

Client Sample ID: MW-5S (121)

Sample #: 017 Date Sampled: 12/12/02 14:15 Date Received: 12/13/02 Matrix: WATER

Trace Inductively Co	upled Plasma	(ICP) Meta	ls			Reviewed
Arsenic		0.0098 B	0.010	mg/L	SW846 6010B	
Cadmium		ND	0.0020	mg/L	SW846 6010B	
Cobalt		0.0025 B	0.0070	mg/L	SW846 6010B	
Lead		ND	0.0030	mg/L	SW846 6010B	
Vanadium		ND	0.0070	mg/L	SW846 6010B	
Arsenic	Dissolved	ND	0.010	mg/L	SW846 6010B	
Cadmium	Dissolved	ND	0.0020	mg/L	SW846 6010B	
Cobalt	Dissolved	0.0026 B	0.0070	mg/L	SW846 6010B	
Lead	Dissolved	ND	0.0030	mg/L	SW846 6010B	
Vanadium	Dissolved	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled	Plasma (ICP)	Metals				Reviewed
Barium		0.18 B	0.20	mg/L	SW846 6010B	1101201104
Iron		10.2	0.10	mg/L	SW846 6010B	
Manganese		1.6	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.15 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	2.2	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	1.6	0.015	mg/L	SW846 6010B	
Mercury in Liquid Wa	ste (Manual	_				Reviewed
Mercury		0.000088 B	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	ND	0.00020	mg/L	SW846 7470A	

B Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

#### ENSR Consulting & Engineering

PAGE 39

Lot #: A2L130219

ONALASKA LANDFILL

Date Reported:

8/14/03

Project Number: 00507

REPORTING

ANALYTICAL

METHOD

PARAMETER RESULT

Client Sample ID: MW-5S (121)

Sample #: 017 Date Sampled: 12/12/02 14:15 Date Received: 12/13/02 Matrix: WATER

LIMIT UNITS

Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	130	5.0	ug/L	RSK SOP-175	
``````````````````````````````````````					
77 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					
Volatile Organics by GC/MS	MD		/*	GHOAC OOCOD	Reviewed
Benzene	ND	7.7	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	7.7	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	3.8	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	3.8	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	7.7	ug/L	SW846 8260B	
Ethylbenzene	6.2 J	7.7	ug/L	SW846 8260B	
Methylene chloride	3.9 J	7.7	ug/L	SW846 8260B	
Naphthalene	6.2 J	7.7	$\mathbf{ug/L}$	SW846 8260B	
Tetrachloroethene	ND	7.7	ug/L	SW846 8260B	
Toluene	ND	7.7	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	7.7	ug/L	SW846 8260B	
Trichloroethene	ND	7.7	$\mathtt{ug}/\mathtt{L}$	SW846 8260B	
1,2,4-Trimethylbenzene	210	7.7	${f ug/L}$	SW846 8260B	
1,3,5-Trimethylbenzene	47	7.7	ug/L	SW846 8260B	
Vinyl chloride	ND	7.7	$\mathtt{ug}/\mathtt{L}$	SW846 8260B	
Xylenes (total)	12	7.7	ug/L	SW846 8260B	
Bromomethane	ND	7.7	$\mathtt{ug}/\mathtt{L}$	SW846 8260B	
Chloroethane	ND	7.7	${\tt ug/L}$	SW846 8260B	
Chloromethane	ND	7.7	ug/L	SW846 8260B	
Acetone	ND	77	ug/L	SW846 8260B	
Bromodichloromethane	ND	7.7	ug/L	SW846 8260B	
Bromoform	ND	7.7	ug/L	SW846 8260B	
2-Butanone	ND	77	ug/L	SW846 8260B	
Carbon disulfide	ND	7.7	ug/L	SW846 8260B	
Carbon tetrachloride	ND	7.7	ug/L	SW846 8260B	
Chlorobenzene	ND	7.7	ug/L	SW846 8260B	
Dibromochloromethane	ND	7.7	ug/L	SW846 8260B	
Chloroform	ND	7.7	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	7.7	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	7.7	ug/L	SW846 8260B	
T, Z-DICHIOTOPTOPAHE	ND	1.1	u9/ Li	2M040 0700B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE 40 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER LIMIT UNITS METHOD RESULT Client Sample ID: MW-5S (121) Date Sampled: 12/12/02 14:15 Date Received: 12/13/02 Matrix: WATER Sample #: 017 Volatile Organics by GC/MS Reviewed cis-1,3-Dichloropropene ND 7.7 uq/L SW846 8260B trans-1,3-Dichloropropene ND ug/L 7.7 SW846 8260B 2-Hexanone ND 77 ug/L SW846 8260B 4-Methyl-2-pentanone ND 77 ug/L SW846 8260B 7.7 SW846 8260B Styrene ND ug/L 1,1,2,2-Tetrachloroethane ND 7.7 uq/L SW846 8260B 1,1,2-Trichloroethane ND 7.7 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 140 5.0 mg/L MCAWW 310.1 Chloride 5.8 1.0 mg/L MCAWW 300.0A Nitrate as N 0.10 0.10 mg/L MCAWW 300.0A 0.34 B Sulfate 1.0 mg/L MCAWW 300.0A Total Organic Carbon mg/L 1 MCAWW 415.1 B Estimated result. Result is less than RL. Client Sample ID: TRIP Sample #: 018 Date Sampled: 12/12/02 14:15 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Benzene ND 1.0 uq/L SW846 8260B 1,1-Dichloroethane ND 1.0 ug/L SW846 8260B cis-1,2-Dichloroethene ND0.50 ug/L SW846 8260B trans-1,2-Dichloroethene ND 0.50 uq/L SW846 8260B 1,1-Dichloroethene ND 1.0 ug/L SW846 8260B Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride 2.0 1.0 uq/L SW846 8260B Naphthalene ND 1.0 SW846 8260B ug/L Tetrachloroethene ND 1.0 ug/L SW846 8260B Toluene ND 1.0 ug/L SW846 8260B 1,1,1-Trichloroethane ND 1.0 SW846 8260B ug/L

(Continued on next page)

1.0

uq/L

SW846 8260B

ND

Trichloroethene

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL 8/14/03 Date Reported: Project Number: 00507 REPORTING ANALYTICAL RESULT <u>LIMIT</u> UNITS METHOD PARAMETER Client Sample ID: TRIP Sample #: 018 Date Sampled: 12/12/02 14:15 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed 1,2,4-Trimethylbenzene ND 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene ND 1.0 uq/L SW846 8260B Vinyl chloride ND 1.0 ug/L SW846 8260B Xylenes (total) ND 1.0 SW846 8260B ug/L Bromomethane ND 1.0 ug/L SW846 8260B Chloroethane ND 1.0 ug/L SW846 8260B Chloromethane ND 1.0 ug/L SW846 8260B Acetone ND 10 ug/L SW846 8260B Bromodichloromethane 1.0 ug/L SW846 8260B Bromoform ND 1.0 ug/L SW846 8260B 2-Butanone ND 10 SW846 8260B ug/L Carbon disulfide ND 1.0 ug/L SW846 8260B Carbon tetrachloride ND1.0 ug/L SW846 8260B Chlorobenzene ND 1.0 ug/L SW846 8260B ND 1.0 SW846 8260B Dibromochloromethane ug/L Chloroform ND 1.0 SW846 8260B ug/L 1,2-Dichloroethane ND1.0 ug/L SW846 8260B ug/L SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L SW846 8260B cis-1,3-Dichloropropene ND 1.0 SW846 8260B trans-1,3-Dichloropropene ND1.0 ug/L ND 10 SW846 8260B 2-Hexanone ug/L 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B ND 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B ug/L 1,1,2-Trichloroethane ND 1.0 SW846 8260B Client Sample ID: MW-14S (127) Sample #: 019 Date Sampled: 12/12/02 15:00 Date Received: 12/13/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.010 mg/L SW846 6010B Cadmium 0.00045 B 0.0020 mq/L SW846 6010B Cobalt 0.0052 B 0.0070 mq/LSW846 6010B Lead 0.0030 mg/L SW846 6010B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE 42 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-14S (127) Date Sampled: 12/12/02 15:00 Date Received: 12/13/02 Matrix: WATER Sample #: 019 Vanadium 0.0070 SW846 6010B mq/L Arsenic Dissolved ND 0.010 SW846 6010B mg/L 0.0020 SW846 6010B Cadmium Dissolved ND mg/L Cobalt Dissolved 0.0052 B 0.0070 mg/L SW846 6010B Lead Dissolved ND 0.0030 mg/L SW846 6010B Vanadium Dissolved ND SW846 6010B 0.0070 mg/L Inductively Coupled Plasma (ICP) Metals Reviewed 0.18 B 0.20 mq/L SW846 6010B Barium mg/L SW846 6010B Iron 11.6 0.10 Manganese 3.7 0.015 mg/L SW846 6010B Barium Dissolved 0.15 B 0.20 mq/L SW846 6010B Tron Dissolved 4.9 0.10 mg/L SW846 6010B Dissolved 3.4 SW846 6010B Manganese 0.015 mg/L Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed SW846 7470A 0.000088 B 0.00020 mg/L Mercury Dissolved 0.000095 B 0.00020 SW846 7470A Mercury mg/L B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed 5.0 Ethane ND ug/L RSK SOP-175 Ethene ND5.0 uq/L RSK SOP-175 Methane 450 5.0 uq/L RSK SOP-175 Volatile Organics by GC/MS Reviewed Benzene ND 1.0 uq/L SW846 8260B ND 1.0 ug/L SW846 8260B 1,1-Dichloroethane cis-1,2-Dichloroethene ND 0.50 ug/L SW846 8260B trans-1,2-Dichloroethene ND 0.50 ug/L SW846 8260B 1.0 SW846 8260B 1,1-Dichloroethene ND ug/L Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride 2.1 1.0 ug/L SW846 8260B SW846 8260B Naphthalene 5.0 1.0 ug/L

(Continued on next page)

1.0

ug/L

SW846 8260B

ND

Tetrachloroethene

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 43 Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-14S (127) Sample #: 019 Date Sampled: 12/12/02 15:00 Date Received: 12/13/02 Matrix: WATER Volatile Organics by GC/MS Reviewed ND 1.0 uq/L SW846 8260B 1.1.1-Trichloroethane ND 1.0 ug/L SW846 8260B SW846 8260B Trichloroethene ND 1.0 ug/L 1,2,4-Trimethylbenzene 1.7 1.0 ug/L SW846 8260B 0.64 J 1,3,5-Trimethylbenzene 1.0 ug/L SW846 8260B Vinyl chloride ND 1 0 ug/L SW846 8260B Xylenes (total) SW846 8260B 1.4 1.0 ug/L Bromomethane ND 1.0 SW846 8260B ug/L Chloroethane ND 1.0 ug/L SW846 8260B Chloromethane ND SW846 8260B 1.0 ug/L Acetone 4.3 J 10 ug/L SW846 8260B Bromodichloromethane 1.0 ug/L SW846 8260B Bromoform ND 1.0 ug/L SW846 8260B 2-Butanone ND 10 ug/L SW846 8260B Carbon disulfide ND 1.0 ug/L SW846 8260B Carbon tetrachloride ND 1.0 ug/L SW846 8260B Chlorobenzene ND 1.0 SW846 8260B ug/L Dibromochloromethane ND 1.0 ug/L SW846 8260B Chloroform ND1.0 SW846 8260B ug/L 1,2-Dichloroethane ND 1.0 SW846 8260B ug/L ND 1,2-Dichloropropane 1.0 ug/L SW846 8260B cis-1,3-Dichloropropene ND1.0 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B ND 1.0 ug/L SW846 8260B Styrene 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 210 5.0 MCAWW 310.1 mg/L Chloride 5.0 1.0 mg/L MCAWW 300.0A Nitrate as N 0.010 B 0.10 mg/L MCAWW 300.0A

(Continued on next page)

1 0

mg/L

MCAWW 300.0A

3.0

Sulfate

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-14S (127) Sample #: 019 Date Sampled: 12/12/02 15:00 Date Received: 12/13/02 Matrix: WATER Total Organic Carbon Reviewed Total Organic Carbon mg/L MCAWW 415.1 14 1 B Estimated result. Result is less than RL. Client Sample ID: PZ-1 (129) Sample #: 020 Date Sampled: 12/12/02 15:30 Date Received: 12/13/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.0029 B 0.010 mq/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt ND 0.0070 mg/L SW846 6010B Lead ND 0.0030 mg/L SW846 6010B Vanadium 0.0013 B 0.0070 mg/L SW846 6010B Arsenic Dissolved ND 0.010 mg/L SW846 6010B Cadmium Dissolved ND 0.0020 mg/L SW846 6010B Cobalt Dissolved ND 0.0070 mg/L SW846 6010B Lead Dissolved ND 0.0030 mg/L SW846 6010B Dissolved 0.0011 B Vanadium 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed 0.024 B Barium 0.20 mq/L SW846 6010B Iron ND mq/L 0.10 SW846 6010B Manganese 0.19 0.015 mq/L SW846 6010B Barium Dissolved 0.022 B 0.20 mq/L SW846 6010B Iron Dissolved ND 0.10 mg/L SW846 6010B Manganese Dissolved 0.18 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed 0.000091 B 0.00020 mg/L SW846 7470A Mercury Dissolved 0.00010 B 0.00020 mg/L SW846 7470A 8 Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 0.50 uq/L RSK SOP-175

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

### ENSR Consulting & Engineering

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Lot #: A2L130219 ONALASKA LANDFILL

Date Reported: 8/14/03

	Project Numb	Project Number: 00507			, ,
	•	REPORTING	3	ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: PZ-1 (129)					
Sample #: 020 Date Sampled:	12/12/02 15:	30 Date Re	eceived: 12	/13/02 Matrix:	WATER
Dissolved Gases in Water					Reviewed
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	6.6	0.50	ug/L	RSK SOP-175	
			-5, -		
Volatile Organics by GC/MS					Reviewed
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	uq/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	3.4	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering Lot #: A2L130219 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL METHOD RESULT PARAMETER LIMIT UNITS Client Sample ID: PZ-1 (129) Sample #: 020 Date Sampled: 12/12/02 15:30 Date Received: 12/13/02 Matrix: WATER Reviewed Volatile Organics by GC/MS 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ND 10 uq/L SW846 8260B Styrene ND 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane 1.0 ug/L SW846 8260B ND

ch

EN t #: A2L140130		Consulting & Engineering ONALASKA LANDFILL Project Number: 00507			Date Reported:		PAGE 8/14/03
PARAMETER		RESULT	REPORTING LIMIT	UNITS_	METHOD	CALI	
_							
<b>Client Sample ID: AV</b> Sample #: 001 Da	1-13 (133) te Sampled: 12	/12/02 19:0	00 Date Re	eceived:	12/14/02 Ma	trix:	WATER
Trace Inductively	Coupled Plasma	(ICP) Meta	als				Reviewe
Arsenic	•	0.0033 B	0.010	mg/L	SW846 6	010B	
Cadmium		ND	0.0020	mg/L	SW846 6	010B	
Cobalt		0.0043 B	0.0070	mg/L	SW846 6	010B	
Lead		ND	0.0030	mg/L	SW846 6	010B	
Vanadium		ND	0.0070	mg/L	SW846 6		
Arsenic	Dissolved	ND	0.010	mg/L	SW846 6	010B	
Cadmium	Dissolved	ND	0.0020	mg/L	SW846 6	010B	
Cobalt	Dissolved	0.0045 B	0.0070	mg/L	SW846 6	010B	
Lead	Dissolved	ND	0.0030	mg/L	SW846 6	010B	
Vanadium	Dissolved	ND	0.0070	mg/L	SW846 6	010B	
Inductively Couple	A Dlaema (TCD)	Motals					Reviewe
Barium	tu Flasma (ICF)	0.28	0.20	mg/L	SW846 6	. 0.1 NB	Verteme
Iron		4.7	0.10	mg/L	SW846 6		
Manganese		24.3	0.10	mg/L	SW846 6		
Barium	Dissolved		0.20	mg/L	SW846 6		
Iron	Dissolved	ND	0.10	mg/L	SW846 6		
Manganese	Dissolved		0.015	mg/L	SW846 6		
Mercury in Liquid	Wasto (Manual	Cold-Vapor	1				Reviewe
Mercury in Diquid	Masce (Mandar	ND	0.00020	mg/L	SW846 7	74707	VeATeme
Mercury	Dissolved	ND	0.00020	mg/L	SW846 7		
B Estimated result. Result is les	s than RL.						
Dissolved Gases in	n Water						Reviewe
Ethane		ND	2.5	ug/L	RSK SOE	2-175	
Ethene		ND	2.5	ug/L	RSK SOF	P-175	
Methane		300	2.5	սց/և	RSK SOI	2-175	
Volatile Organics	by GC/MS						Reviewe
Benzene	x ==/	ND	1.0	ug/L	SW846 8	3260B	
				_			
	ane	ND	1.0	ua/L	SW846 8	3260B	
1,1-Dichloroethacis-1,2-Dichloro		ИD	1.0 0.50	ug/L ug/L	SW846 8 SW846 8		

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_\_

### ENSR Consulting & Engineering

PAGE

Reviewed

Lot #: A2L140130

ONALASKA LANDFILL

Date Reported: 8/14/03

Project Number: 00507

ANALYTICAL

REPORTING PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: AW-13 (133)

Volatile Organics by GC/MS

Sample #: 001 Date Sampled: 12/12/02 19:00 Date Received: 12/14/02 Matrix: WATER

٧.	racite organics by GC/Mb					1
	1,1-Dichloroethene	ND	1.0	ug/L	SW846	8260B
	Ethylbenzene	ND	1.0	ug/L	SW846	8260B
	Methylene chloride	3.6	1.0	ug/L	SW846	8260B
	Naphthalene	ND	1.0	ug/L	SW846	8260B
	Tetrachloroethene	ND	1.0	ug/L	SW846	8260B
	Toluene	ND	1.0	ug/L	SW846	8260B
	1,1,1-Trichloroethane	ND	1.0	ug/L	SW846	8260B
	Trichloroethene	ND	1.0	ug/L	SW846	8260B
	1,2,4-Trimethylbenzene	2.0	1.0	ug/L	SW846	8260B
	1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846	8260B
	Vinyl chloride	ND	1.0	ug/L	SW846	8260B
	Xylenes (total)	ND	1.0	ug/L	SW846	8260B
	Bromomethane	ND	1.0	ug/L	SW846	8260B
	Chloroethane	ND	1.0	ug/L	SW846	8260B
	Chloromethane	ND	1.0	ug/L	SW846	8260B
	Acetone	2.5 J	10	ug/L	SW846	8260B
	Bromodichloromethane	ND	1.0	ug/L	SW846	8260B
	Bromoform	ND	1.0	ug/L	SW846	8260B
	2-Butanone	ИD	10	ug/L	SW846	8260B
	Carbon disulfide	ND	1.0	ug/L	SW846	8260B
	Carbon tetrachloride	ND	1.0	ug/L	SW846	8260B
	Chlorobenzene	ND	1.0	ug/L	SW846	8260B
	Dibromochloromethane	ND	1.0	ug/L	SW846	8260B
	Chloroform	ND	1.0	ug/L	SW846	8260B
	1,2-Dichloroethane	ND	1.0	ug/L	SW846	8260B
	1,2-Dichloropropane	ND	1.0	ug/L	SW846	8260B
	cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B
	trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B
	2-Hexanone	ND	10	ug/L	SW846	8260B
	4-Methyl-2-pentanone	ND	10	ug/L	SW846	8260B
	Styrene	ND	1.0	ug/L	SW846	8260B
	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846	8260B
	1,1,2-Trichloroethane	ND	1.0	ug/L	SW846	8260B

J Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering Lot #: A2L140130 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL LIMIT UNITS METHOD PARAMETER RESULT Client Sample ID: AW-13 (133) Sample #: 001 Date Sampled: 12/12/02 19:00 Date Received: 12/14/02 Matrix: WATER Inorganic Analysis Reviewed Alkalinity 550 5.0 mq/L MCAWW 310.1 Chloride 2.6 2.0 mg/L MCAWW 300.0A Nitrate as N 0.20 0.10 mg/L MCAWW 300.0A Sulfate 3.1 1.0 mg/L MCAWW 300.0A Total Organic Carbon 1 mg/L MCAWW 415.1 Client Sample ID: AW-13 DUP (133) Sample #: 002 Date Sampled: 12/12/02 19:05 Date Received: 12/14/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.010 mq/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.0044 B 0.0070 mg/L SW846 6010B Lead ND 0.0030 mg/L SW846 6010B Vanadium 0.0070 mg/L SW846 6010B Arsenic Dissolved ND 0.010 mg/L SW846 6010B Dissolved ND Cadmium 0.0020 mg/L SW846 6010B Cobalt Dissolved 0.0043 B 0.0070 mq/L SW846 6010B Lead Dissolved ND 0.0030 mq/L SW846 6010B Dissolved ND 0.0070 SW846 6010B Vanadium mg/L Inductively Coupled Plasma (ICP) Metals Reviewed SW846 6010B Barium 0.27 0.20 mq/L Tron 5.1 0.10 mq/L SW846 6010B Manganese 23.7 0.015 mq/L SW846 6010B Barium Dissolved 0.23 0.20 mg/L SW846 6010B Dissolved 0.062 B 0.10 mg/L SW846 6010B Iron

Manganese

Mercury

Mercury

(Continued on next page)

0.015

0.00020

0.00020

mg/L

mg/L

mg/L

SW846 6010B

SW846 7470A

SW846 7470A

Reviewed

Dissolved 22.1

Dissolved ND

ND

Mercury in Liquid Waste (Manual Cold-Vapor)

B Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

### ENSR Consulting & Engineering

PAGE 4

Lot #: A2L140130

ONALASKA LANDFILL

Date Reported: 8/14/03

Project Number: 00507

ANALYTICAL

REPORTING PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: AW-13 DUP (133)

Sample #: 002 Date Sampled: 12/12/02 19:05 Date Received: 12/14/02 Matrix: WATER

Dissolved Gases in Water					Reviewed
Ethane	ND	1.0	ug/L	RSK SOP-175	
Ethene	ND	1.0	ug/L	RSK SOP-175	
Methane	340	1.0	ug/L	RSK SOP-175	
Walatila Organias hu GG/MG					Reviewed
Volatile Organics by GC/MS	ND	1 0	110 /T	CMOAC OOCOD	Reviewed
Benzene	ND ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane		1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	3.6	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	1.8	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	1.1	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ИD	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	5.9 J	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	${ m ug/L}$	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
z,z biomioropropune	****	4.0	~ J / L	31.010 02000	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A2L140130 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-13 DUP (133) Sample #: 002 Date Sampled: 12/12/02 19:05 Date Received: 12/14/02 Matrix: WATER Volatile Organics by GC/MS Reviewed cis-1,3-Dichloropropene ND 1.0 uq/L SW846 8260B trans-1,3-Dichloropropene 1.0 uq/L SW846 8260B ND SW846 8260B ND10 ug/L 2-Hexanone 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B Styrene ND 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND SW846 8260B 1.0 ug/L 1 Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 550 5.0 mg/L MCAWW 310.1 Chloride 2.3 2.0 mg/L MCAWW 300.0A Nitrate as N 0.28 0.10 mg/L MCAWW 300.0A 2.7 Sulfate 1.0 mg/L MCAWW 300.0A Total Organic Carbon 1 mg/L MCAWW 415.1 Client Sample ID: AW-28 (136) Sample #: 003 Date Sampled: 12/12/02 20:00 Date Received: 12/14/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.0026 B SW846 6010B Arsenic 0.010 mg/L Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.0064 B 0.0070 mq/L SW846 6010B Lead 0.0030 mg/L SW846 6010B Vanadium ND 0.0070 mg/L SW846 6010B Arsenic Dissolved ND 0.010 mg/L SW846 6010B Cadmium Dissolved ND 0.0020 mg/L SW846 6010B Dissolved 0.0063 B 0.0070 SW846 6010B Cobalt mg/L Dissolved ND Lead 0.0030 mg/L SW846 6010B Vanadium Dissolved ND 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed SW846 6010B Barium 0.26 0.20 mg/L

The results shown below may still require additional laboratory review and are subject to

ot #: A2L140130		CONSULTING & CONSULT Number	NDFILL	ng	Date Reported:	PAGE 8/14/0
	FL	Project Number: 00507 REPORTING			ANALYTICAL	
PARAMETER		RESULT	LIMIT	UNITS	METHOD	
	0 (126)					
Client Sample ID: AW-28 Sample #: 003 Date	•	/12/02 20:0	0 Date Re	ceived: 12	2/14/02 Matrix:	WATER
Iron		9.8	0.10	mg/L	SW846 6010B	
Manganese		5.0	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.21	0.20	mg/L	SW846 6010B	
Iron	Dissolved	2.3	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	4.6	0.015	mg/L	SW846 6010B	
Mercury in Liquid Was	ste (Manual	Cold-Vapor)				Reviewe
Mercury		ND	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	0.000096 B	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Wa	ater					
Ethane Ethene <b>Methan</b> e		ND ND <b>1200</b>	5.0 5.0 <b>5.0</b>	ug/L ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175 RSK SOP-175	Reviewe
Ethene <b>Methane</b>		ND	5.0	ug/L	RSK SOP-175	
Ethene Methane  Volatile Organics by		ND 1200	5.0 5.0	ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175	
Ethene Methane  Volatile Organics by Benzene		ND 1200 ND	5.0 5.0	ug/L <b>ug/L</b> ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B	
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane	GC/MS	ND 1200 ND ND	5.0 5.0 1.2 1.2	ug/L <b>ug/L</b> ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth	GC/MS hene	ND 1200 ND	5.0 5.0	ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B	Reviewe
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth	GC/MS hene	ND 1200 ND ND ND	5.0 5.0 1.2 1.2 0.62	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth	GC/MS hene	ND 1200 ND ND ND ND ND	1.2 1.2 0.62 0.62	ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth	GC/MS hene ethene	ND 1200  ND ND ND ND ND ND ND ND ND	1.2 1.2 0.62 0.62 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroet 1,1-Dichloroethene Ethylbenzene	GC/MS hene ethene	ND 1200  ND	1.2 1.2 0.62 0.62 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroethene Ethylbenzene Methylene chloride	GC/MS hene ethene	ND 1200  ND	1.2 1.2 0.62 0.62 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Wethane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth ethylbenzene Methylene chloride Naphthalene	GC/MS hene ethene	ND 1200  ND	5.0 5.0 1.2 1.2 0.62 0.62 1.2 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Wethane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroet trans-1,bichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene	GC/MS hene ethene	ND 1200  ND	5.0 5.0 1.2 1.2 0.62 0.62 1.2 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175  SW846 8260B	
Wethane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroethene	GC/MS hene ethene ane	ND 1200  ND O.83 J	5.0 5.0 1.2 1.2 0.62 0.62 1.2 1.2 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175  SW846 8260B	
Wethane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroethene	GC/MS hene ethene ane	ND 1200  ND ND ND ND ND ND ND ND ND O.83 J ND	5.0 5.0 1.2 1.2 0.62 0.62 1.2 1.2 1.2 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175  SW846 8260B	
Wethane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth ene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroethe Trichloroethene 1,2,4-Trimethylbene 1,3,5-Trimethylbene	GC/MS hene ethene ane zene	ND 1200  ND	5.0 5.0 1.2 1.2 0.62 0.62 1.2 1.2 1.2 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175  SW846 8260B	
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth ethyloenzene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroethe Trichloroethene 1,2,4-Trimethylbens	GC/MS hene ethene ane zene	ND 1200  ND ND ND ND ND ND ND O.83 J ND ND ND ND	5.0 5.0 1.2 1.2 0.62 0.62 1.2 1.2 1.2 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175  SW846 8260B	
Ethene Methane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroeth trans-1,2-Dichloroeth ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroethene Trichloroethene 1,2,4-Trimethylbene	GC/MS hene ethene ane zene	ND 1200  ND ND ND ND ND ND ND ND ND 4.6 ND ND ND 0.83 J ND ND ND 45 21	5.0 5.0 1.2 1.2 0.62 0.62 1.2 1.2 1.2 1.2 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175  SW846 8260B	
Wethane  Volatile Organics by Benzene 1,1-Dichloroethane cis-1,2-Dichloroethene trans-1,2-Dichloroethene Ethylbenzene Methylene chloride Naphthalene Tetrachloroethene Toluene 1,1,1-Trichloroethene Trichloroethene 1,2,4-Trimethylbens Vinyl chloride	GC/MS hene ethene ane zene	ND 1200  ND ND ND ND ND ND ND ND 4.6 ND ND ND 0.83 J ND ND ND 45 21	5.0 5.0 1.2 1.2 0.62 0.62 1.2 1.2 1.2 1.2 1.2 1.2	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175  SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. -----ENSR Consulting & Engineering PAGE Lot #: A2L140130 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER LIMIT UNITS RESULT METHOD Client Sample ID: AW-28 (136) Sample #: 003 Date Sampled: 12/12/02 20:00 Date Received: 12/14/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Chloromethane ND 1.2 uq/L SW846 8260B Acetone 5.4 J 12 ug/L SW846 8260B Bromodichloromethane ND 1.2 ug/L SW846 8260B Bromoform ND 1.2 ug/L SW846 8260B 2-Butanone ND 12 ug/L SW846 8260B Carbon disulfide ND 1.2 ug/L SW846 8260B Carbon tetrachloride ND 1.2 ug/L SW846 8260B Chlorobenzene ND 1.2 ug/L SW846 8260B Dibromochloromethane ND 1.2 SW846 8260B ug/L SW846 8260B Chloroform ND 1.2 ug/L 1,2-Dichloroethane ND 1.2 SW846 8260B ug/L 1,2-Dichloropropane ND ug/L SW846 8260B 1.2 cis-1,3-Dichloropropene ND 1.2 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.2 ug/L SW846 8260B 2-Hexanone ND 12 ug/L SW846 8260B 4-Methyl-2-pentanone ND 12 uq/L SW846 8260B ND1.2 Styrene uq/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.2 uq/L SW846 8260B 1,1,2-Trichloroethane 1.2 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 370 5.0 mg/L MCAWW 310.1 Chloride 10.8 1.0 mg/L MCAWW 300.0A Nitrate as N 1.1 0.10 mg/L MCAWW 300.0A Sulfate 1.4 1.0 mg/L MCAWW 300.0A Total Organic Carbon 1 mg/L MCAWW 415.1 Client Sample ID: AW-25 (135) Date Sampled: 12/12/02 17:20 Date Received: 12/14/02 Matrix: WATER Sample #: 004 Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.0034 B 0.010 mq/L SW846 6010B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A2L140130 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL RESULT PARAMETER LIMIT UNITS METHOD Client Sample ID: AW-25 (135) Sample #: 004 Date Sampled: 12/12/02 17:20 Date Received: 12/14/02 Matrix: WATER Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.0049 B 0.0070 mg/L SW846 6010B Lead 0.0030 mq/L SW846 6010B Vanadium ND 0.0070 mg/L SW846 6010B Arsenic Dissolved ND 0.010 SW846 6010B mg/L Cadmium Dissolved ND 0.0020 mg/L SW846 6010B Cobalt Dissolved 0.0044 B 0.0070 mg/L SW846 6010B Lead Dissolved ND 0.0030 mg/L SW846 6010B Vanadium Dissolved ND 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed **Barium** 0.20 mg/L SW846 6010B 0.43 Iron 13.8 0.10 mg/L SW846 6010B Manganese 6.6 0.015 mq/L SW846 6010B Dissolved 0.30 0.20 mg/L SW846 6010B Barium Dissolved 1.8 0.10 mg/L SW846 6010B Iron Dissolved 5.5 0.015 mg/L SW846 6010B Manganese Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed mg/L SW846 7470A Mercury ND 0.00020 Dissolved ND 0.00020 mg/L SW846 7470A Mercury B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 5.0 ug/L RSK SOP-175 Ethene ND 5.0 ug/L RSK SOP-175 Methane 570 5.0 ug/L RSK SOP-175 Volatile Organics by GC/MS Reviewed 7.8 ND ug/L SW846 8260B Benzene 1,1-Dichloroethane ND 7.8 ug/L SW846 8260B

(Continued on next page)

3.9

3.9

7.8

7.8

ug/L

ug/L

ug/L

uq/L

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

ND

ND

ND

ND

cis-1,2-Dichloroethene

1,1-Dichloroethene

Ethylbenzene

trans-1,2-Dichloroethene

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE ONALASKA LANDFILL Date Reported: Lot #: A2L140130 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-25 (135) Sample #: 004 Date Sampled: 12/12/02 17:20 Date Received: 12/14/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Methylene chloride 5.1 J 7.8 uq/L SW846 8260B Naphthalene 4.5 J 7.8 uq/L SW846 8260B SW846 8260B Tetrachloroethene ND 7.8 ug/L Toluene ND 7.8 ug/L SW846 8260B 1,1,1-Trichloroethane ND7.8 ug/L SW846 8260B Trichloroethene ND 7.8 ug/L SW846 8260B 1,2,4-Trimethylbenzene 7.8 SW846 8260B 240 ug/L 1,3,5-Trimethylbenzene 38 7.8 ug/L SW846 8260B Vinyl chloride ND 7.8 ug/L SW846 8260B Xylenes (total) 7.8 SW846 8260B 5.6 J ug/L Bromomethane ND 7.8 ug/L SW846 8260B Chloroethane ND 7.8 uq/L SW846 8260B SW846 8260B Chloromethane ND 7.8 ug/L ND 78 ug/L SW846 8260B Acetone Bromodichloromethane ND7.8 ug/L SW846 8260B Bromoform ND 7.8 ug/L SW846 8260B 2-Butanone 78 ug/L SW846 8260B ND 7.8 Carbon disulfide ND ug/L SW846 8260B Carbon tetrachloride ND 7.8 ug/L SW846 8260B ND 7.8 ug/L SW846 8260B Chlorobenzene ND Dibromochloromethane 7.8 ug/L SW846 8260B Chloroform ND7.8 ug/L SW846 8260B 1,2-Dichloroethane ND7.8 ug/L SW846 8260B 1,2-Dichloropropane ND 7.8 ug/L SW846 8260B cis-1,3-Dichloropropene ND 7.8 ug/L SW846 8260B trans-1,3-Dichloropropene ND 7.8 ug/L SW846 8260B 2-Hexanone ND 78 ug/L SW846 8260B 4-Methyl-2-pentanone ND 78 ug/L SW846 8260B ND 7.8 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 7.8 ug/L SW846 8260B 7.8 SW846 8260B 1,1,2-Trichloroethane ND ug/L J Estimated result. Result is less than RL. Inorganic Analysis Reviewed

(Continued on next page)

5.0

mg/L

MCAWW 310.1

520

Alkalinity

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A2L140130 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-25 (135) Sample #: 004 Date Sampled: 12/12/02 17:20 Date Received: 12/14/02 Matrix: WATER Chloride Reviewed Chloride 2.1 2.0 mg/L MCAWW 300.0A Nitrate as N 0.97 0.10 mg/L MCAWW 300.0A Sulfate 4.4 1.0 mq/L MCAWW 300.0A Total Organic Carbon mq/L 1 MCAWW 415.1 Client Sample ID: AW-20 (134) Sample #: 005 Date Sampled: 12/12/02 17:30 Date Received: 12/14/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.0088 B mg/L SW846 6010B Arsenic 0.010 Cadmium 0.00037 B 0.0020 mg/L SW846 6010B Cobalt 0.011 0.0070 mg/L SW846 6010B Lead 0.0030 mg/L SW846 6010B ND Vanadium ND 0.0070 mg/L SW846 6010B Arsenic Dissolved ND 0.010 mq/L SW846 6010B Cadmium Dissolved ND 0.0020 mq/L SW846 6010B Cobalt Dissolved 0.011 SW846 6010B 0.0070 mg/L Dissolved ND Lead 0.0030 mq/L SW846 6010B Vanadium Dissolved ND 0.0070 mq/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed 0.20 mq/L SW846 6010B 0.29 Iron 23.3 0.10 mg/L SW846 6010B 17.0 SW846 6010B Manganese 0.015 mg/L Barium Dissolved 0.16 B 0.20 mg/L SW846 6010B Iron Dissolved 3.3 0.10 mg/L SW846 6010B Dissolved 14.1 0.015 mg/L SW846 6010B Manganese

Mercury

Mercury

Mercury in Liquid Waste (Manual Cold-Vapor)

Dissolved ND

(Continued on next page)

0.000087 B 0.00020

0.00020

Reviewed

SW846 7470A

SW846 7470A

mg/L

mq/L

B Estimated result, Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_

ENSR Consulting & Engineering

PAGE

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### Lot #: A2L140130 ONALASKA LANDFILL 8/14/03 Date Reported: Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-20 (134) Sample #: 005 Date Sampled: 12/12/02 17:30 Date Received: 12/14/02 Matrix: WATER Dissolved Gases in Water Reviewed Ethane ND 5.0 ug/L RSK SOP-175 Ethene ND 5.0 ug/L RSK SOP-175 Methane 1600 5.0 uq/L RSK SOP-175 Volatile Organics by GC/MS Reviewed Benzene 1.0 ug/L SW846 8260B 1,1-Dichloroethane ND 1.0 SW846 8260B ug/L ND SW846 8260B cis-1,2-Dichloroethene 0.50 ug/L trans-1,2-Dichloroethene ND 0.50 SW846 8260B ug/L 1,1-Dichloroethene ND 1.0 ug/L SW846 8260B ND SW846 8260B Ethylbenzene 1.0 ug/L Methylene chloride 3.4 1.0 ug/L SW846 8260B Naphthalene 0.64 J 1.0 ug/L SW846 8260B Tetrachloroethene ND SW846 8260B 1.0 ug/L Toluene ND 1.0 SW846 8260B uq/L 1,1,1-Trichloroethane ND 1.0 ug/L SW846 8260B Trichloroethene ND 1.0 ug/L SW846 8260B 1,2,4-Trimethylbenzene 22 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene 17 1.0 ug/L SW846 8260B Vinyl chloride 1.0 ug/L SW846 8260B Xylenes (total) 1.1 1.0 ug/L SW846 8260B

1.0

1.0

1.0

10

1.0

1.0

10

1.0

1.0

1.0

1.0

1.0

1.0

1.0

ug/L

uq/L

ug/L

ug/L

SW846 8260B

(Continued on next page)

ND

3.6 J

Bromomethane

Chloroethane

Acetone

Bromoform

2-Butanone

Chloroform

Chloromethane

Bromodichloromethane

Carbon tetrachloride

Dibromochloromethane

1,2-Dichloroethane

1,2-Dichloropropane

Carbon disulfide

Chlorobenzene

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE 12 ONALASKA LANDFILL Lot #: A2L140130 Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-20 (134) Sample #: 005 Date Sampled: 12/12/02 17:30 Date Received: 12/14/02 Matrix: WATER Volatile Organics by GC/MS Reviewed cis-1,3-Dichloropropene ND 1.0 uq/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 uq/L SW846 8260B SW846 8260B 2-Hexanone ND10 ug/L 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B Styrene ND1.0 ug/L SW846 8260B ND 1.0 1,1,2,2-Tetrachloroethane ug/L SW846 8260B 1,1,2-Trichloroethane ND SW846 8260B 1.0 ug/L J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 600 5.0 mg/L MCAWW 310.1 Chloride 1.8 1.0 mg/L MCAWW 300.0A Nitrate as N ND 0.10 mg/L MCAWW 300.0A Sulfate 1.1 1.0 mg/L MCAWW 300.0A Total Organic Carbon 15 1 mg/L MCAWW 415.1 Client Sample ID: AW-9 (132) Sample #: 006 Date Sampled: 12/12/02 18:00 Date Received: 12/14/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed SW846 6010B Arsenic 0.010 mg/L Cadmium ND 0.0020 mg/L SW846 6010B Cobalt ND 0.0070 mq/L SW846 6010B Lead ND 0.0030 mg/L SW846 6010B ND Vanadium 0.0070 mg/L SW846 6010B Arsenic Dissolved ND 0.010 mg/L SW846 6010B Cadmium Dissolved ND 0.0020 mg/L SW846 6010B Dissolved ND Cobalt mg/L SW846 6010B 0.0070 Dissolved ND Lead 0.0030 mg/L SW846 6010B Vanadium Dissolved ND 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.072 B 0.20 ma/L SW846 6010B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

t #: A2L140130		Consulting & Engineering ONALASKA LANDFILL Project Number: 00507			Date Reported:	PAGE 13 8/14/03
		RESULT	REPORTING LIMIT	UNITS	METHOD	
Client Sample ID: AW Sample #: 006 Da		/12/02 18	:00 Date Re	ceived: 12	2/14/02 Matrix:	WATER
Iron		0.067 B	0.10	mg/L	SW846 6010B	
Manganese		0.041	0.015	mg/L	SW846 6010B	
Barium	Dissolved	0.064 B	0.20	mg/L	SW846 6010B	
Iron	Dissolved	ND	0.10	mg/L	SW846 6010B	
Manganese	Dissolved	0.040	0.015	mg/L	SW846 6010B	
Mercury in Liquid	Waste (Manual	Cold-Vapo	or)			Reviewed
Mercury		ND	0.00020	mg/L	SW846 7470A	
Mercury	Dissolved	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Ethane	Water	ND	0.50	ug/L	RSK SOP-175	Reviewed
Ethene		ND	0.50	ug/L	RSK SOP-175	
Methane		260	0.50	ug/L	RSK SOP-175	
Volatile Organics	by GC/MS					Reviewed
Benzene	,	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroetha	ne	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloro		ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichlo		ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethe	ne	ND	1.0	ug/L	SW846 8260B	
I/I DICHIECTOCCHE				110 /T	017046 00600	
Ethylbenzene		ND	1.0	ug/L	SW846 8260B	
· · · · · · · · · · · · · · · · · · ·		ND <b>3.8</b>	1.0 1.0	ug/L ug/L	SW846 8260B	
Ethylbenzene				-		
Ethylbenzene <b>Methylene chlori</b>	de	3.8	1.0	ug/L	SW846 8260B	
Ethylbenzene <b>Methylene chlori</b> Naphthalene	de	3.8 ND	1.0 1.0	<b>ug/L</b> ug/L	<b>SW846 8260B</b> SW846 8260B	
Ethylbenzene <b>Methylene chlori</b> Naphthalene Tetrachloroethen	<b>de</b> e	3.8 ND ND	1.0 1.0 1.0	<b>ug/L</b> ug/L ug/L	<b>SW846 8260B</b> SW846 8260B SW846 8260B	
Ethylbenzene Methylene chlori Naphthalene Tetrachloroethen Toluene	<b>de</b> e	3.8 ND ND ND	1.0 1.0 1.0	<b>ug/L</b> ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethylbenzene Methylene chlori Naphthalene Tetrachloroethen Toluene 1,1,1-Trichloroe	<b>de</b> e thane	3.8 ND ND ND	1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethylbenzene  Methylene chlori Naphthalene Tetrachloroethen Toluene 1,1,1-Trichloroe Trichloroethene 1,2,4-Trimethylb 1,3,5-Trimethylb	de e thane enzene	3.8 ND ND ND ND	1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethylbenzene Methylene chlori Naphthalene Tetrachloroethen Toluene 1,1,1-Trichloroe Trichloroethene 1,2,4-Trimethylb 1,3,5-Trimethylb Vinyl chloride	de e thane enzene	3.8 ND ND ND ND ND ND	1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethylbenzene Methylene chlori Naphthalene Tetrachloroethen Toluene 1,1,1-Trichloroe Trichloroethene 1,2,4-Trimethylb 1,3,5-Trimethylb Vinyl chloride Xylenes (total)	de e thane enzene	3.8 ND ND ND ND ND ND ND	1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Ethylbenzene Methylene chlori Naphthalene Tetrachloroethen Toluene 1,1,1-Trichloroe Trichloroethene 1,2,4-Trimethylb 1,3,5-Trimethylb Vinyl chloride	de e thane enzene	3.8 ND D 1.6 ND ND	1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW8468260BSW8468260BSW8468260BSW8468260BSW8468260BSW8468260BSW8468260BSW8468260BSW8468260BSW8468260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A2L140130 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL RESULT METHOD PARAMETER LIMIT UNITS Client Sample ID: AW-9 (132) Sample #: 006 Date Sampled: 12/12/02 18:00 Date Received: 12/14/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Chloromethane ND 1.0 ug/L SW846 8260B Acetone 2.9 J 10 uq/L SW846 8260B Bromodichloromethane ND 1.0 ug/L SW846 8260B Bromoform ND 1.0 ug/L SW846 8260B 2-Butanone ND10 ug/L SW846 8260B Carbon disulfide ND 1.0 ug/L SW846 8260B Carbon tetrachloride ND 1.0 ug/L SW846 8260B Chlorobenzene ND 1.0 ug/L SW846 8260B Dibromochloromethane ND 1.0 ug/L SW846 8260B Chloroform ND 1.0 ug/L SW846 8260B 1,2-Dichloroethane ND 1.0 ug/L SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L SW846 8260B cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B Styrene ND 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 220 5.0 mg/L MCAWW 310.1 Chloride 3.1 1.0 mg/L MCAWW 300.0A Nitrate as N 0.42 0.10 mg/L MCAWW 300.0A Sulfate 3.5 1.0 mg/L MCAWW 300.0A Total Organic Carbon 1 1 mg/L MCAWW 415.1 Client Sample ID: AW-1 (131) Sample #: 007 Date Sampled: 12/12/02 18:00 Date Received: 12/14/02 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.010 mg/L SW846 6010B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

		onsulting 8		ring		PAGE 1	
t #: A2L140130		ONALASKA LA			Date Reported:	<b>8/14/</b> 03	
	Pr	oject Numbe					
D. D. MEMBE			REPORTI		ANALYTICAL		
PARAMETER		RESULT	LIMIT	UNITS	METHOD		
Client Sample ID: AW-	1 (131)						
Sample #: 007 Date	e Sampled: 12	/12/02 18:0	00 Date I	Received: 1	12/14/02 Matrix:	WATER	
Cadmium		0.0032	0.0020	mg/L	SW846 6010B		
Cobalt		0.0043 B	0.0070	mg/L	SW846 6010B		
Lead		ND	0.0030	mg/L	SW846 6010B		
Vanadium		ND	0.0070	mg/L	SW846 6010B		
Arsenic	Dissolved	ND	0.010	mg/L	SW846 6010B		
Cadmium	Dissolved	ND	0.0020	mg/L	SW846 6010B		
Cobalt	Dissolved	0.0045 B	0.0070	mg/L	SW846 6010B		
Lead	Dissolved	ND	0.0030	mg/L	SW846 6010B		
Vanadium	Dissolved	ND	0.0070	mg/L	SW846 6010B		
Inductively Coupled	Plasma (ICP)	Metals				Reviewed	
Barium	, ,	0.25	0.20	mg/L	SW846 6010B		
Iron		4.5	0.10	mg/L	SW846 6010B		
Manganese		6.0	0.015	mg/L	SW846 601 <b>0B</b>		
Barium	Dissolved	0.21	0.20	mg/L	SW846 601 <b>0B</b>		
Iron	Dissolved	2.9	0.10	mg/L	SW846 6010B		
Manganese	Dissolved		0.015	mg/L	SW846 6010B		
Mercury in Liquid W	asto (Manual	Cold-Vanor)	1			Reviewed	
Mercury In Diquid W	asce (Mandai	ND	0.00020	mg/L	SW846 7470A	Keviewed	
Mercury	Dissolved	ND	0.00020	mg/L	SW846 7470A		
B Estimated result. Result is less th	an RL.						
Dissolved Gases in	Water					Reviewed	
Ethane		ND	5.0	ug/L	RSK SOP-175		
Ethene		ND	5.0	ug/L	RSK SOP-175		
Methane		1500	5.0	ug/L	RSK SOP-175		
Volatile Organics b	y GC/MS					Reviewed	
Benzene		ND	1.0	ug/L	SW846 8260B		
1,1-Dichloroethan		ND	1.0	ug/L	SW846 8260B		
cis-1,2-Dichloroe		ИD	0.50	ug/L	SW846 8260B		
trans-1,2-Dichlor		ИD	0.50	ug/L	SW846 8260B		
1,1-Dichloroethen	e	ND	1.0	ug/L	SW846 8260B		
Ethylbenzene		ND	1.0	ug/L	SW846 8260B		

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ KNSR Consulting & Engineering PAGE Lot #: A2L140130 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL RESULT LIMIT UNITS PARAMETER METHOD Client Sample ID: AW-1 (131) Sample #: 007 Date Sampled: 12/12/02 18:00 Date Received: 12/14/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Methylene chloride 3.8 1.0 ug/L SW846 8260B Naphthalene ND 1.0 ug/L SW846 8260B Tetrachloroethene ND 1.0 ug/L SW846 8260B Toluene ND 1.0 ug/L SW846 8260B 1,1,1-Trichloroethane ND 1.0 ug/L SW846 8260B Trichloroethene ND 1.0 ug/L SW846 8260B 1,2,4-Trimethylbenzene 25 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene 22 1.0 ug/L SW846 8260B Vinyl chloride ND1.0 ug/L SW846 8260B Xylenes (total) 4.0 1.0 ug/L SW846 8260B Bromomethane ND 1.0 uq/L SW846 8260B Chloroethane ND 1.0 ug/L SW846 8260B Chloromethane ND 1.0 ug/L SW846 8260B 6.0 J 10 SW846 8260B uq/L Bromodichloromethane ND1.0 SW846 8260B ug/L Bromoform SW846 8260B ND 1.0 ug/L 2-Butanone ND10 ug/L SW846 8260B Carbon disulfide ND1.0 uq/L SW846 8260B Carbon tetrachloride ND 1.0 ug/L SW846 8260B ND Chlorobenzene 1.0 ug/L SW846 8260B Dibromochloromethane ND1.0 ug/L SW846 8260B Chloroform ND 1.0 ug/L SW846 8260B 1,2-Dichloroethane ND 1.0 ug/L SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L SW846 8260B ND cis-1,3-Dichloropropene 1.0 ug/L SW846 8260B ND trans-1,3-Dichloropropene 1.0 ug/L SW846 8260B ND 10 2-Hexanone ug/L SW846 8260B 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B ND 1.0 Styrene ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B J. Estimated result. Result is less than RL. Inorganic Analysis Reviewed

(Continued on next page)

5.0

mg/L

MCAWW 310.1

290

Alkalinity

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A2L140130 ONALASKA LANDFILL Date Reported: 8/14/03 Project Number: 00507 REPORTING ANALYTICAL RESULT LIMIT UNITS METHOD Client Sample ID: AW-1 (131) Sample #: 007 Date Sampled: 12/12/02 18:00 Date Received: 12/14/02 Matrix: WATER Chloride Reviewed Chloride 1.0 mg/L MCAWW 300.0A 2.1 Nitrate as N ND 0.10 mg/L MCAWW 300.0A Sulfate 9.1 1.0 mq/L MCAWW 300.0A . 6 Total Organic Carbon 1 mg/L MCAWW 415.1 Client Sample ID: TRIP Sample #: 008 Date Sampled: 12/12/02 18:00 Date Received: 12/14/02 Matrix: WATER Volatile Organics by GC/MS Reviewed Benzene ND 1.0 ug/L SW846 8260B 1,1-Dichloroethane ND 1.0 ug/L SW846 8260B cis-1,2-Dichloroethene ND 0.50 ug/L SW846 8260B ND trans-1,2-Dichloroethene 0.50 ug/L SW846 8260B 1,1-Dichloroethene ND1.0 SW846 8260B ug/L Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride SW846 8260B 1.9 1.0 ug/L SW846 8260B ND Naphthalene 1.0 ug/L Tetrachloroethene ND 1.0 SW846 8260B ug/L Toluene ND 1.0 ug/L SW846 8260B 1,1,1-Trichloroethane ND 1.0 uq/L SW846 8260B Trichloroethene ND 1.0 ug/L SW846 8260B 1,2,4-Trimethylbenzene ND 1.0 uq/L SW846 8260B 1,3,5-Trimethylbenzene 1.0 ug/L SW846 8260B ug/L Vinyl chloride ND 1.0 SW846 8260B Xylenes (total) ND1.0 ug/L SW846 8260B Chloromethane ND1.0 ug/L SW846 8260B Acetone ND 10 ug/L SW846 8260B Bromodichloromethane 1.0 ND ug/L SW846 8260B cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B Bromomethane ND 1.0 ug/L SW846 8260B Chloroethane ND 1.0 SW846 8260B ug/L Bromoform ND1.0 ug/L SW846 8260B 2-Butanone ND 10 ug/L SW846 8260B Carbon disulfide ND1.0 SW846 8260B ug/L Carbon tetrachloride ND1.0 ug/L SW846 8260B Chlorobenzene 1.0 ug/L SW846 8260B

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ENSR Consulting & Engineering

Lot #: A2L140130

ONALASKA LANDFILL

Date Reported: 8/14/03

Project Number: 00507

REPORTING

RESULT LIMIT UNITS

ANALYTICAL METHOD

PARAMETER

Client Sample ID: TRIP

Sample #: 008 Date Sampled: 12/12/02 18:00 Date Received: 12/14/02 Matrix: WATER

Volatile Organics by GC/MS					Reviewed
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	

DNR-WCR

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

t #: A3J080218	ENSR Consulting & ONALASKA LANDFII			Date Reported:	PAGE 10/27/03
PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
THE ABIDA	1110011				
Client Sample ID: MW-15M					
Sample #: 001 Date Sa	mpled: 10/07/03 13:3	0 Date Re	eceived: 10	0/08/03 Matrix:	WATER
Trace Inductively Coupl					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	0.00092 B	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	0.13	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Pla	ema (TCD) Matale				Reviewed
Barium	0.74	0.20	mg/L	SW846 6010B	Keviewee
Iron	4.1	0.10	mg/L	SW846 6010B	
	3.4	0.10	mg/L	SW846 6010B	
Manganese	3.4	0.015	mg/ n	SW040 OOLOB	
Mercury in Liquid Waste	(Manual Cold-Vapor)				Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.					.*
Dissolved Gases in Wate	er .				Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	19	0.50	ug/L	RSK SOP-175	
Volatile Organics by GC	C/MS				Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
			-		
Chloroform	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

\_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-15M Sample #: 001 Date Sampled: 10/07/03 13:30 Date Received: 10/08/03 Matrix: WATER Volatile Organics by GC/MS Reviewed 1.0 SW846 8260B 1,2-Dichloropropane ND ug/L cis-1,3-Dichloropropene ND 1.0 uq/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 SW846 8260B ug/L 10 SW846 8260B 2-Hexanone ND ug/L 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B 1.0 SW846 8260B Styrene ND ug/L 1.0 ug/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 SW846 8260B 1,1,2-Trichloroethane ND ug/L Benzene ND 1.0 ug/L SW846 8260B 1,1-Dichloroethane ND 1.0 ug/L SW846 8260B 0.29 Ј 0.50 SW846 8260B cis-1,2-Dichloroethene ug/L trans-1,2-Dichloroethene 0.50 SW846 8260B ND uq/L 1,1-Dichloroethene 1.0 SW846 8260B ND ug/L ug/L Ethylbenzene ND 1.0 SW846 8260B Methylene chloride ug/L 1.0 SW846 8260B ND Naphthalene 1.0 SW846 8260B ND ug/L Tetrachloroethene ND 1.0 SW846 8260B ug/L Toluene ND 1.0 SW846 8260B ug/L SW846 8260B 1,1,1-Trichloroethane 1.0 ND ug/L Trichloroethene ND 1.0 uq/L SW846 8260B 1,2,4-Trimethylbenzene 0.29 J 1.0 uq/L SW846 8260B 1,3,5-Trimethylbenzene 1.0 SW846 8260B ND ug/L Vinyl chloride ND 1.0 ug/L SW846 8260B Xylenes (total) ND 1.0 SW846 8260B ug/L J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 230 5.0 mg/L MCAWW 310.1 Chloride 5.1 1.0 mq/L MCAWW 300.0A

(Continued on next page)

0.10

1.0

mg/L

mg/L

mg/L

MCAWW 300.0A

MCAWW 300.0A

MCAWW 415.1

ND

5.8

Nitrate as N

Total Organic Carbon

Sulfate

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

PAGE 3 ENSR Consulting & Engineering 10/27/03 Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-6S Date Sampled: 10/07/03 12:40 Date Received: 10/08/03 Matrix: WATER Sample #: 002 Trace Inductively Coupled Plasma (ICP) Metals Reviewed SW846 6010B Arsenic 0.010 mg/L Cadmium ND 0.0020 mg/L SW846 6010B Cobalt ND 0.0070 mg/L SW846 6010B 0.0030 Lead ND mg/L SW846 6010B SW846 6010B Vanadium ND 0.0070 mg/L Reviewed Inductively Coupled Plasma (ICP) Metals SW846 6010B 0.13 B 0.20 mg/L Barium SW846 6010B Iron ND 0.10 mg/L Manganese 2.7 0.015 mg/L SW846 6010B Reviewed Mercury in Liquid Waste (Manual Cold-Vapor) SW846 7470A Mercury 0.00020 mg/L B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 0.50 uq/L RSK SOP-175 Ethene ND 0.50 ug/L RSK SOP-175 Methane 7.9 0.50 ug/L RSK SOP-175 Volatile Organics by GC/MS Reviewed Bromomethane ND 1.0 ug/L SW846 8260B Chloroethane ND 1.0 ug/L SW846 8260B ND 1.0 ug/L SW846 8260B Chloromethane ND 10 uq/L SW846 8260B Acetone

(Continued on next page)

1.0

1.0

1.0

1.0

1.0

1.0

1.0

1.0

1.0

ug/L

ug/L

ug/L

uq/L

ug/L

ug/L

uq/L

uq/L

uq/L

SW846 8260B

ND

ND

MD

ND

MD.

MD

ND

ND

MD

Bromodichloromethane

Carbon tetrachloride

Dibromochloromethane

1,2-Dichloroethane

Carbon disulfide

Chlorobenzene

Chloroform

Bromoform 2-Butanone

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

PAGE

Lot #: A3J080218

ENSR Consulting & Engineering ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

		REPORTING		ANALYTICAL	
PARAMETER	RESHLT	T.TMTT	UNITS	METHOD	

Client	Sample	ID:	MW-6S
--------	--------	-----	-------

Sample #: 002 Date Sampled: 10/07/03 12:40 Date Received: 10/08/03 Matrix: WATER

Volatile Organics by GC/MS						Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846	8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B	
2-Hexanone	ND	10	ug/L	SW846	8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846	8260B	
Styrene	ND	1.0	ug/L	SW846	8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846	8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Benzene	ND	1.0	ug/L	SW846	8260B	
1,1-Dichloroethane	0.71 J	1.0	ug/L	SW846	8260B	
cis-1,2-Dichloroethene	0.59	0.50	ug/L	SW846	8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846	8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846	8260B	
Ethylbenzene	ND	1.0	ug/L	SW846	8260B	
Methylene chloride	ND	1.0	ug/L	SW846	8260B	
Naphthalene	ND	1.0	${ m ug/L}$	SW846	8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846	8260B	
Toluene	ND	1.0	${ m ug/L}$	SW846	8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Trichloroethene	0.37 J	1.0	ug/L	SW846	8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846	8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846	8260B	
Vinyl chloride	ND	1.0	ug/L	SW846	8260B	
Xylenes (total)	ND	1.0	ug/L	SW846	8260B	
L. Estimated words. Double to the Di						
J Estimated result. Result is less than RL.						

Inorganic Analysis				Reviewed
Alkalinity	150	5.0	mg/L	MCAWW 310.1
Chloride	5.6	1.0	mg/L	MCAWW 300.0A
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A
Sulfate	3.6	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	5	1	ma/L	мслий 415.1

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering Lot #: A3J080218

PAGE 5 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

t #: A3J080218					
PARAMETER	RESULT	REPORTING LIMIT	G UNITS	ANALYTICAL METHOD	
					and the second second second second
Client Sample ID: MW-6M					
Sample #: 003 Date Sampl	led: 10/07/03 12:	25 Date Re	eceived:	10/08/03 Matrix:	WATER
Trace Inductively Coupled	Plasma (TCP) Met	als			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	0.0024 B	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma	a (ICP) Metals				Reviewed
Barium	0.89	0.20	mg/L	SW846 6010B	ROVIONOG
Iron	0.12	0.10	mg/L	SW846 6010B	
Manganese	2.8	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (Mercury	ND	0.00020	mg/L	SW846 7470A	
			mg/L	SW846 7470A	
Mercury  B Estimated result. Result is less than RL.			mg/L	SW846 7470A	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water	ND	0.00020			Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane	ND ND	0.00020	ug/L	RSK SOP-175	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water	ND	0.00020			Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane	ND ND ND 6.6	0.00020 0.50 0.50	ug/L ug/L	RSK SOP-175 RSK SOP-175	Reviewed Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene	ND ND ND 6.6	0.00020 0.50 0.50	ug/L ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane	ND ND ND 6.6	0.00020 0.50 0.50 0.50	ug/L ug/L <b>ug/L</b> ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane	ND ND ND 6.6 S ND ND	0.00020 0.50 0.50 0.50	ug/L ug/L <b>ug/L</b> ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane	ND ND ND 6.6	0.00020 0.50 0.50 0.50	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone	ND ND OFFER S ND ND ND ND ND	0.00020 0.50 0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane	ND ND ND 6.6 S ND ND ND ND ND ND	0.00020 0.50 0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform	ND ND OFFER S ND ND ND ND ND	0.00020 0.50 0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND ND ND O ND	0.00020 0.50 0.50 0.50 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	ND N	0.00020 0.50 0.50 0.50 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND N	0.00020 0.50 0.50 0.50 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloroethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND ND ND 6.6 S ND	0.00020 0.50 0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND N	0.00020 0.50 0.50 0.50 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	

6

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

\_\_\_\_\_ ENSR Consulting & Engineering PAGE ONALASKA LANDFILL, WISCONSIN Lot #: A3J080218 10/27/03 Date Reported: REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-6M Sample #: 003 Date Sampled: 10/07/03 12:25 Date Received: 10/08/03 Matrix: WATER Volatile Organics by GC/MS Reviewed SW846 8260B 1,2-Dichloropropane ND 1.0 ug/L cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 1.0 trans-1,3-Dichloropropene ND ug/L SW846 8260B 10 SW846 8260B 2-Hexanone ND uq/L 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B ND 1.0 SW846 8260B Styrene ug/L 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B 1.0 Benzene ND ug/L SW846 8260B 0.61 J 1,1-Dichloroethane 1.0 SW846 8260B ug/L cis-1,2-Dichloroethene 0.42 J0.50 uq/L SW846 8260B trans-1,2-Dichloroethene ND 0.50 ug/L SW846 8260B 1,1-Dichloroethene ND 1.0 SW846 8260B ug/L Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride ND 1.0 SW846 8260B uq/L Naphthalene ND 1.0 ug/L SW846 8260B 1.0 SW846 8260B Tetrachloroethene ND ug/L SW846 8260B Toluene ND 1.0 uq/L 1,1,1-Trichloroethane SW846 8260B ND 1.0 ug/L Trichloroethene SW846 8260B ND 1.0 ug/L 1,2,4-Trimethylbenzene ND 1.0 uq/L SW846 8260B 1,3,5-Trimethylbenzene ND 1.0 uq/L SW846 8260B Vinyl chloride ND 1.0 uq/L SW846 8260B Xylenes (total) ND 1.0 ug/L SW846 8260B J Estimated result. Result is less than RL. Inorganic Analysis Reviewed Alkalinity 140 5.0 mg/L MCAWW 310.1 Chloride 4.7 1.0 MCAWW 300.0A mq/L Nitrate as N 0.020 B 0.10 MCAWW 300.0A mg/L Sulfate 1.8 1.0 MCAWW 300.0A mq/L

Total Organic Carbon

(Continued on next page)

1

mq/L

MCAWW 415.1

3

B Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

t #: A3J080218	ENSR Consulting ONALASKA LANDFI	-	_	Date Reported:	PAGE 10/27/03
		REPORTING	G	ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: PZ-4					
——————————————————————————————————————	Sampled: 10/07/03 11:	50 Date Re	eceived:	10/08/03 Matrix:	WATER
Trace Inductively Coup	oled Plasma (ICP) Met	cals			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Pl	Lasma (ICP) Metals				Reviewed
Barium	0.077 в	0.20	mg/L	SW846 6010B	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	2.0	0.015	mg/L	SW846 6010B	
Mercury in Liquid Wast	re (Manual Cold-Vapor	~)			Reviewed
Mercury	ND	0.00020	mq/L	SW846 7470A	
B Estimated result. Result is less than RI					
Dissolved Gases in Wat	cer				Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	10	0.50	ug/L	RSK SOP-175	
Volatile Organics by (	EC/MS				Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	IC VICWOU
Chloroethane	ND	1.0	ug/L ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L ug/L	SW846 8260B	
Acetone	ND	10	ug/L ug/L	SW846 8260B	
Bromodichloromethane		1.0	ug/L ug/L	SW846 8260B	
Bromoform	ND ND	1.0	ug/L ug/L	SW846 8260B	
2-Butanone		1.0	_	SW846 8260B	
Z-Butanone Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
	ND		ug/L		
Carbon tetrachloride		1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	e ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

1.0

1.0

ug/L

ug/L

SW846 8260B

SW846 8260B

ND

ND

Chloroform

1,2-Dichloroethane

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

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Lot #: A3J080218

ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER		RESUI	T	REPORT:	ING UNITS	ANALY METHO	TICAL D	
ient Sample ID:	PZ-4							
mple #: 004	Date Sampled:	10/07/03	11:5	0 Date	Received:	10/08/03	Matrix:	WATER
/olatile Organi	.cs bv GC/MS							Reviewe
1,2-Dichlorop		ND		1.0	ug/L	SW846	8260B	=
cis-1,3-Dichl		ND		1.0	ug/L	SW846	8260B	
trans-1,3-Dic		ND		1.0	ug/L	SW846	8260B	
2-Hexanone		ND		10	ug/L	SW846	8260B	
4-Methyl-2-pe	ntanone	ND		10	ug/L	SW846	8260B	
Styrene		ND		1.0	ug/L	SW846	8260B	
1,1,2,2-Tetra	chloroethane	ND		1.0	ug/L	SW846	8260B	
1,1,2-Trichlo		ND		1.0	ug/L	SW846	8260B	
Benzene		ND		1.0	ug/L	SW846	8260B	
1,1-Dichloroe	thane	0.33	J	1.0	ug/L	SW846	8260B	
cis-1,2-Dichl		0.46	J	0.50	ug/L	SW846	8260B	
trans-1,2-Dic		ND		0.50	ug/L	SW846	8260B	
1,1-Dichloroe		ND		1.0	ug/L	SW846	8260B	
Ethylbenzene		ND		1.0	ug/L	SW846	8260B	
Methylene chl	oride	ND		1.0	ug/L		8260B	
Naphthalene		ND		1.0	ug/L	SW846	8260B	
Tetrachloroet	hene	ND		1.0	ug/L	SW846	8260B	
Toluene		ND		1.0	ug/L	SW846	8260B	
1,1,1-Trichlo	roethane	ND		1.0	ug/L	SW846	8260B	
Trichloroethe		0.34	J	1.0	ug/L	SW846	8260B	
1,2,4-Trimeth		ND		1.0	ug/L	SW846	8260B	
1,3,5-Trimeth		ND		1.0	ug/L	SW846	8260B	
Vinyl chlorid		ND		1.0	ug/L	SW846	8260B	
Xylenes (tota		ND		1.0	ug/L	SW846	8260B	
J Estimated result. Result	is less than RL.							
Inorganic Analy	zsi s							Reviewe
Alkalinity	Contract of	130		5.0	mq/L	MCAGG	310.1	EXX. V. J. V.: W.C.
Chloride		4.5		1.0	mg/L		1 300.1 1 300.0A	
Nitrate as N		4.3 ND		0.10	mg/L		1 300.0A	
Sulfate as N		5.1		1.0	mq/L		700.0A 7300.0A	
	: Carbon	3.1. 4		1.0	mg/L		r 300.0A F 415.1	

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Date Reported: 10/27/03

PAGE

Lot #: A3J080218

ONALASKA LANDFILL, WISCONSIN

		REPORTING		ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
ient Sample ID: PZ-3					
mple #: 005 Date Sampled:	10/07/03 16:	30 Date Re	ceived: 1	.0/08/03 Matrix:	WATER
Trace Inductively Coupled Pla					Review
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (	ICP) Metals				Review
Barium	0.081 B	0.20	mq/L	SW846 6010B	,
Iron	0.58	0.10	mg/L	SW846 6010B	
Manganese	2.2	0.015	mg/L	SW846 6010B	
nanganese	2.2	0.015	mg/ L	5,010 00105	
Mercury in Liquid Waste (Manu	ual Cold-Vapor	c)			Review
Mercury	-	В 0.00020	mq/L	SW846 7470A	
B Estimated result. Result is less than RL.					
B Estimated result. Result is less than RL.  Dissolved Gases in Water					Review
	ND	0.50	ug/L	RSK SOP-175	Review
Dissolved Gases in Water	ND ND	0.50 0.50	ug/L ug/L	RSK SOP-175 RSK SOP-175	Review
Dissolved Gases in Water Ethane			-		Review
Dissolved Gases in Water Ethane Ethene	ND	0.50	ug/L	RSK SOP-175	Review
Dissolved Gases in Water Ethane Ethene	ND	0.50	ug/L	RSK SOP-175	
Dissolved Gases in Water Ethane Ethene Methane	ND	0.50	ug/L	RSK SOP-175	Review
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS	ND <b>51</b>	0.50 0.50	ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane	ND <b>51</b> ND	0.50 0.50	ug/L <b>ug/L</b> ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane	ND 51 ND ND	0.50 0.50 1.0 1.0	ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane	ND 51 ND ND ND	0.50 0.50 1.0 1.0	ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone	ND 51 ND ND ND ND	0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane	ND 51  ND ND ND ND ND ND	0.50 0.50 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform	ND 51  ND ND ND ND ND ND ND ND	0.50 0.50 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND 51  ND	0.50 0.50 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	ND 51  ND	0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND 51  ND	0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND 51  ND	0.50 0.50 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	

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Lot #: A3J080218

ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTI	ING UNITS	ANALYTICAL METHOD	
Client Sample ID: PZ-3					
Sample #: 005 Date Sampled:	10/07/03 16	:30 Date	Received: 10	0/08/03 Matrix	: WATER
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	uq/L	SW846 8260B	
Methylene chloride .	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	180	5.0	mg/L	MCAWW 310.1	
Chloride	5.5	1.0	mq/L	MCAWW 300.0	A
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0	Λ
Sulfate	3.5	1.0	mg/L	MCAWW 300.0	
Total Organic Carbon	6	1	mg/L	MCAWW 415.1	

The regults show below may still require additional laboratory region and are subject to

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

change. Actions taken based on these results are the responsibility of the data user.

		ENSR Consulting & Engineering
Lot #:	A3J080218	ONALASKA LANDFILL, WISCONSTN

& Engineering PAGE 11 LL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	G UNITS	ANALYTICAL METHOD	
CHANIELEK	KESOUI	_ DIGIT	ONTID	METHOD	
ient Sample ID: PZ-2					
mple #: 006 Date Sampled	1: 10/07/03 16:	00 Date Re	eceived: 1	10/08/03 Matrix:	WATER
Trace Inductively Coupled Pl	.asma (ICP) Met	als			Review
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	0.0016 B	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (	(ICP) Metals				Review
Barium	0.071 B	0.20	mq/L	SW846 6010B	
Iron	20.8	0.10	mg/L	SW846 6010B	
Manganese	1.5	0.015	mg/L	SW846 6010B	
					- '
Mercury in Liquid Waste (Mar	<del>-</del>		/ =	GE20.4.6. = 4.7.0.7	Review
Mercury	ND	0.00020	mq/L	SW846 7470A	
B Estimated result. Result is less than RL.	N.D	0.0000	J.		
1				RSK SOP-175	Review
B Estimated result. Result is less than RL.  Dissolved Gases in Water	ND ND	5.0	ug/L	RSK SOP-175 RSK SOP-175	Review
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane	ND			RSK SOP-175 RSK SOP-175 RSK SOP-175	Review
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane	ND ND	5.0 5.0	ug/L ug/L	RSK SOP-175	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS	ND ND <b>490</b>	5.0 5.0 5.0	ug/L ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane	ND ND <b>490</b> ND	5.0 5.0 5.0	ug/L ug/L <b>ug/L</b> ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane	ND ND <b>490</b> ND ND	5.0 5.0 5.0 5.0	ug/L ug/L <b>ug/L</b> ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane	ND ND <b>490</b> ND ND ND	5.0 5.0 5.0 5.0	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone	ND ND <b>490</b> ND ND ND ND	5.0 5.0 5.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane	ND ND 490  ND ND ND ND ND ND ND	5.0 5.0 5.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform	ND ND 490  ND ND ND ND ND ND ND ND ND	5.0 5.0 5.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND ND 490  ND	5.0 5.0 5.0 5.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	ND ND 490  ND	5.0 5.0 5.0 5.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND ND 490  ND	5.0 5.0 5.0 5.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND ND 490  ND	5.0 5.0 5.0 5.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	
B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND ND 490  ND	5.0 5.0 5.0 5.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Review

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Lot #: A3J080218

ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER		RESULT		REPORTING LIMIT UNITS		ANAL) METHO		
Client Sample ID:	PZ-2							
Sample #: 006	Date Sampled:	10/07/03	16:00	Date	Received:	10/08/03	Matrix:	WATER
Volatile Organi	lcs by GC/MS							Reviewed
1,2-Dichlorop		ND	1	.0	ug/L	SW846	8260B	
cis-1,3-Dichl	oropropene	ND	1	.0	ug/L	SW846	8260B	
trans-1,3-Dio		ND	1	.0	ug/L	SW846	8260B	
2-Hexanone		ND	1	0	ug/L	SW846	8260B	
4-Methyl-2-p∈	entanone	ND	1	0	ug/L	SW846	8260B	
Styrene		ND	1	.0	ug/L	SW846	8260B	
1,1,2,2-Tetra	chloroethane	ND	1	.0	ug/L	SW846	8260B	
1,1,2-Trichlo	roethane	ND	1	.0	ug/L	SW846	8260B	
Benzene		ND	1	.0	ug/L	SW846	8260B	
1,1-Dichloroe	ethane	ND	1	.0	ug/L	SW846	8260B	
cis-1,2-Dichl	oroethene	ND	0	.50	ug/L	SW846	8260B	
trans-1,2-Dic	chloroethene	ND	0	.50	ug/L	SW846	8260B	
1,1-Dichloroe	ethene	ND	1	.0	ug/L	SW846	8260B	
Ethylbenzene		ND	1	.0	ug/L	SW846	8260B	
Methylene chl	oride	ND	1	.0	ug/L	SW846	8260B	
Naphthalene		ND	1	.0	ug/L	SW846	8260B	
Tetrachloroet	chene	ND	1	.0	ug/L	SW846	8260B	
Toluene		ND	1	.0	ug/L	SW846	8260B	
1,1,1-Trichlo	roethane	ND	1	.0	ug/L	SW846	8260B	
Trichloroethe	ene	ND	1	.0	ug/L	SW846	8260B	
1,2,4-Trimeth	nylbenzene	ND	1	.0	ug/L	SW846	8260B	
1,3,5-Trimeth	nylbenzene	ND	1	.0	ug/L	SW846	8260B	
Vinyl chloric	le	ND	1	.0	ug/L	SW846	8260B	
Xylenes (tota	al)	ND	1	.0	ug/L	SW846	8260B	
Turning to 7								David and 3
Inorganic Analy	ysıs	22	-	0	/~		. 210 -	Reviewed
Alkalinity		77		.0	mg/L		7 310.1	
Chloride		6.6		. 0	mg/L		W 300.0A	
Nitrate as N		ИD		.10	mg/L		₹ 300.0A	
Sulfate		ND		. 0	mg/L		7 300.0A	
Total Organic	: Carbon	7	1.		mg/L	MCAWI	4 415.1	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_

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PAGE 13

Lot #: A3J080218

ONALASKA LANDFILL, WISCONSIN

Date Reported: 10/27/03

22234222		REPORTIN		ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Comple ID. MW 15MD					
Client Sample ID: MW-15MD Sample #: 007 Date Sampled: 10	0/07/02 12.	30 Data D	eceived: 10	0/08/03 Matrix:	מידות עניי
bampie #: 007 Date Sampied. It	0/0//05 15.	. Jo Date R	ecerved. I	0/00/03 Macrix:	WAIDA
Trace Inductively Coupled Plasma	a (ICP) Met	cals			Reviewe
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	0.043	0.0030	mq/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP	) Metals				Reviewe
Barium	0.75	0.20	mq/L	SW846 6010B	
Iron	1.6	0.10	mg/L	SW846 6010B	
Manganese	3.5	0.015	mg/L	SW846 6010B	
			<b>9.</b>		
Mercury in Liquid Waste (Manual	Cold-Vapor	c)			Reviewe
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewe
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	21	0.50	ug/L	RSK SOP-175	
			<b>3</b> . –		
Volatile Organics by GC/MS					Reviewe
Bromomethane	ND	1.0	ug/L	SW846 8260B	110120110
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	uq/L	SW846 8260B	
2-Butanone	ND	10	uq/L	SW846 8260B	
Carbon disulfide	ND	1.0	uq/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	uq/L	SW846 8260B	
Chlorobenzene	ND	1.0	uq/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/b	SW846 8260B	
Chloroform	ND	1.0	uq/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	uq/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	uq/L	SW846-8260B	
cis-1,3-Dichloropropene	ND	1.0	uq/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering PAGE 14

Lot	# •	7/3/10/2021/0	

Total Organic Carbon

ONALASKA LANDETLI. WISCONSTA

Date Pererted: 10/27/03

DEPENDEN	D.F. G.F.T. M	REPORT:			ANALYTICAL METHOD	
PARAMETER	RESULT	_ LIMIT	<u>UNITS</u>	METHO		
ient Sample ID: MW-15MD						
nple #: 007 Date Sampled:	10/07/03 13:	30 Date	Received:	10/08/03	Matrix:	WATER
Volatile Organics by GC/MS						Reviewe
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B	
2-Hexanone	ND	10	ug/L	SW846	8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846	8260B	
Styrene	ND	1.0	ug/L	SW846	8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846	8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Benzene	ND	1.0	ug/L	SW846	8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846	8260B	
cis-1,2-Dichloroethene	0.26 J	0.50	ug/L	SW846	8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846	8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846	8260B	
Ethylbenzene	ND	1.0	ug/L	SW846	8260B	
Methylene chloride	ND	1.0	ug/L	SW846	8260B	
Naphthalene	ND	1.0	ug/L	SW846	8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846	8260B	
Toluene	ND	1.0	ug/L	SW846	8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Trichloroethene	ND	1.0	ug/L	SW846	8260B	
1,2,4-Trimethylbenzene	0.28 J	1.0	ug/L	SW846	826 <b>0</b> B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846	8260B	
Vinyl chloride	ND	1.0	ug/L	SW846	8260B	
Xylenes (total)	ND	1.0	ug/L	SW846	8260B	
Ten in Barra a se						
J Estimated result. Result is less than RL.						
Inorganic Analysis						Reviewe
Λlkalinity	230	5.0	mq/L	MCAW	310.1	
Chloride	5.2	1.0	mg/L		7 300.0A	
Nitrate as N	ND	0.10	mq/L		300.0A	

(Continued on next page)

2 1 mg/L MCAWW 415.1

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering ONALASKA LANDFILL, WISCONSIN Lot #: A3J080218

PAGE 15 Date Reported: 10/27/03

PARAME	TER	***	 RESUL'	Γ	REPORT:	ING <u>UNITS</u>	ANAI METH	YTICAL	
Client Sam Sample #:	-		10/07/03	13:30	) Date	Received:	10/08/03	Matrix:	WATER
Volatile	Organi	-	115		1 0	/-	~~~	.c. 00.cop	Reviewed

Volatile Organics by GC/MS				Reviewe	ed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ИD	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	${ m ug/L}$	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ИD	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ИД	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	$\mathrm{ug/L}$	SW846 8260B	
1,2,4-Trimethylbenzene	ИD	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	141)	1.0	$\mathrm{ug/L}$	SW846 8260B	
Xylenes (total)	ИD	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218

ENSR Consulting & Engineering ONALASKA LANDETLI. WISCONSIN

Date Reported: 10/27/03

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			G	ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
lient Sample ID: ACKERMAN					
	10/07/03 11:	00 Date R	eceived:	10/08/03 Matrix:	WATER
Trace Inductively Coupled Plas	sma (ICP) Met	cals			Reviewe
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (IC	CP) Metals	•			Reviewe
Barium	0.023 B	0.20	mq/L	SW846 6010B	
Iron	1.7	0.10	mq/L	SW846 6010B	
Manganese	0.085	0.015	mg/L	SW846 6010B	
B Estimated result. Result is less than RI					
B Estimated result, Result is less than RL.					
B Estimated result. Result is less than RL.  Volatile Organics by GC/MS					Reviewe
	ND	1.0	ug/L	SW846 8260B	Reviewe
Volatile Organics by GC/MS	ND ND	1.0 1.0	ug/L ug/L	SW846 8260B SW846 8260B	Review
Volatile Organics by GC/MS Bromomethane			-	SW846 8260B SW846 8260B	Review
Volatile Organics by GC/MS Bromomethane Chloroethane	ND	1.0	ug/L	SW846 8260B SW846 8260B SW846 8260B	Review
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane	ND ND	1.0 1.0 10 1.0	ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Review
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone	ND ND ND	1.0 1.0 10 1.0	ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND ND ND ND	1.0 1.0 10 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Review
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	ND ND ND ND ND	1.0 1.0 10 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND ND ND ND ND	1.0 1.0 10 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND ND ND ND ND ND ND	1.0 1.0 10 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane	ND ND ND ND ND ND ND ND ND	1.0 1.0 10 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform	ND	1.0 1.0 10 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane	ND N	1.0 1.0 10 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane	ND N	1.0 1.0 10 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene	ND N	1.0 1.0 10 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B	Reviewe
Volatile Organics by GC/MS Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroform 1,2-Dichloroethane 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene	ND N	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	SW846 8260B	Reviewe

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change. Actions taken based on these results are the responsibility of the data user. 

ENSR Consulting & Engineering

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				ENS.	R Consult:	ւng և i	sngine	ering			PAGE 1/
ot #:	A3J0	80218		ON	ALASKA LA	NDFILL	, WISC	ONSIN	Date F	Reported:	10/27/03
						I	REPORT	ING	ANAI	YTICAL	
	PARAMET	FER			RESUL'	<u>r</u> <u>1</u>	LIMIT	UNITS	METH	IOD	
Clie	nt Sam	ole ID:	ACKE	RMAN							
Samp.	le #:	009	Date	Sampled:	10/07/03	11:00	Date	Received:	10/08/03	Matrix:	WATER
Vo	latile	Organi	.cs by	GC/MS							Reviewed
				oethane	ND	-	1.0	ug/L	SW84	16 8260B	
	1,1,2-5	rrichlo	roetha	ane	ND	-	1.0	ug/L	SW84	l6 8260B	
]	Benzene	е			ND		1.0	ug/L	SW84	l6 8260B	
	1,1-Di	chloroe	thane		ND		1.0	ug/L	SW84	16 8260B	
4	cis-1,2	2-Dichl	oroetl	nene	ND	(	0.50	ug/L	SW84	16 8260B	
	trans-1	1,2-Dic	hloro	ethene	ND	(	0.50	ug/L	SW84	16 8260B	
	1,1-Di	chloroe	thene		ND		1.0	ug/L	SW84	16 8260B	
	Ethylbe	enzene			ND	-	1.0	ug/L	SW84	16 8260B	
I	Methyle	ene chl	oride.		ND		1.0	ug/L	SW84	16 8260B	
]	Naphtha	alene			ND	-	1.0	ug/L	SW84	16 8260B	
•	Tetracl	hloroet	hene		ND	-	1.0	ug/L	SW84	16 8260B	
•	Toluene	е			ND		1.0	ug/L	SW84	16 8260B	
	1,1,1-5	Trichlo	roetha	ane	ND		1.0	ug/L	SW84	16 8260B	
	Trichlo	oroethe	ene		ND		1.0	ug/L	SW84	16 8260B	
	1,2,4-	Trimeth	ylben:	zene	ND		1.0	ug/L	SW84	16 8260B	
	1,3,5-	Trimeth	ylben:	zene	ND		1.0	ug/L	SW84	16 8260B	
,	Vinyl o	chloric	le		ND		1.0	ug/L	SW84	l6 8260B	
:	Xylene	s (tota	al)		ND		1.0	ug/L	SW84	16 8260B	

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Lot #: A3J090307

ENSR Consulting & Engineering

PAGE 1
Date Reported: 10/28/03

ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03

Project Number: 00507

REPORTING AT

ANALYTICAL

PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: MW-1SR (116)

Sample #: 001 Date Sampled: 10/08/03 09:50 Date Received: 10/09/03 Matrix: WATER

Sample #: 001 Date Sampled: 10	/08/03 09:5	0 Date 1	Received:	10/09/03 Matrix:	WATER
Trace Inductively Coupled Plasma	(ICP) Meta	ls			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	0.0030 B	0.0070	mg/L	SW846 6010B	
Lead	0.0024 B	0.0030	mg/L	SW846 6010B	
Vanadium	0.0080	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP)	Metals				Reviewed
Barium	0.18 B	0.20	mg/L	SW846 6010B	
Iron	6.2	0.10	mg/L	SW846 6010B	
Manganese	2.1	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (Manual	Cold-Vapor)				Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.					
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	250	0.50	ug/L	RSK SOP-175	
Volatile Organics by GC/MS		4 0	/	arro 4.6. 0.0.60m	Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0 10	ug/L	SW846 8260B	
Acetone Bromodichloromethane	ND		ug/L	SW846 8260B	
Bromodichioromethane	ND	1.0	ug/L	SW846 8260B SW846 8260B	
2-Butanone	ND ND	1.0	ug/L		
z-bucanone Carbon disulfide			ug/L	SW846 8260B	
Carbon disultide Carbon tetrachloride	MD	1.0	ug/L	SW846 8260B	
Carbon tetrachtoride Chlorobenzene	ND ND	1.0	ug/h ug/h	SW846-8260B SW846-8260B	
Dibromochloromethane	ND ND	1.0	ug/L ug/L	SW846 8260B	
Chloroform	ND ND	1.0		SW846 8260B	
	ND ND	1.0	ug/L	SW846 8260B SW846 8260B	
1,2-Dichloroethane	NU	Ι. υ	ug/L	2M940 9790R	

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		ENSR Consulting &	Engineerin	g		PAGE	2
Lot #:	A3J090307	ONALASKA LANDFILL	- WISCONSI	N	Date Reported:	10/28/03	3
		Project Numbe	r: 00507				
			REPORTING		ANALYTICAL		
<u>P.</u>	ARAMETER	RESULT	LIMIT	UNITS	METHOD		

Chloride

Sulfate

Nitrate as N

Total Organic Carbon

Client Sample ID: MW-1SR (116) Sample #: 001 Date Sampled:	10/08/03	09:50 Date	Received:	10/09/03	Matrix:	WATER
Volatile Organics by GC/MS						Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846	8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846	8260B	
2-Hexanone	ND	10	ug/L	SW846	8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846	8260B	
Styrene	ND	1.0	ug/L	SW846	8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846	8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Benzene	ND	1.0	ug/L	SW846	8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846	8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846	8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846	8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846	8260B	
Ethylbenzene	ND	1.0	ug/L	SW846	8260B	
Methylene chloride	ND	1.0	ug/L	SW846	8260B	
Naphthalene	0.34	J 1.0	ug/L	SW846	8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846	8260B	
Toluene	ND	1.0	ug/L	SW846	8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Trichloroethene	ND	1.0	ug/L	SW846	8260B	
1,2,4-Trimethylbenzene	1.1	1.0	ug/L	SW846	8260B	
1,3,5-Trimethylbenzene	0.30	J 1.0	ug/L	SW846	8260B	
Vinyl chloride	ND	1.0	ug/L	SW846	8260B	
Xylenes (total)	0.64	J 1.0	ug/L	SW846	8260B	
J Estimated result. Result is less than RL.						
						n 1
Inorganic Analysis	0.5	F 0	·		040 -	Reviewed
Alkalinity	95	5.0	mg/L	MCAWW	310.1	

(Continued on next page)

1.0

0.10

1.0

1.

mg/L

mg/L

mg/L

mq/L

MCAWW 300.0A

MCAWW 300.0A

MCAWW 300.0A MCAWW 415.1

8.9

ND

7.0

The results shown below may still require additional laboratory review and are subject to

	ENSR Consulting		_		PAGE	
t #: A3J090307	ONALASKA LANDFII		SIN	Date Reported:	10/28/03	
	Project Numb	REPORTING	~	ANALYTICAL		
PARAMETER	RESULT	LIMIT	UNITS	METHOD		
Client Sample ID: PZ-05 (3						
Sample #: 002 Date Sar	apled: 10/08/03 09:	00 Date Re	eceived:	10/09/03 Matrix:	WATER	
Trace Inductively Couple	ed Plasma (ICP) Met	als			Reviewed	
Arsenic	ND	0.010	mg/L	SW846 6010B		
Cadmium	ND	0.0020	mg/L	SW846 6010B		
Cobalt	ND	0.0070	mg/L	SW846 6010B		
Lead	ND	0.0030	mg/L	SW846 6010B		
Vanadium	ND	0.0070	mg/L	SW846 6010B		
~	/TGD)				B 1 1	
Inductively Coupled Pla					Reviewed	
Barium	0.082 B	0.20	mg/L	SW846 6010B	·	
Iron	ND	0.10	mg/L	SW846 6010B		
Manganese	0.43	0.015	mg/L	SW846 6010B		
Moreury in Liquid Waste	(Manual Cold-Vanor	- 1			Reviewed	
Mercury in Liquid Waste Mercury	ND	0.00020	mq/L	SW846 7470A	Neviewed	
mercury	ND	0.00020	шg/ ц	3W040 /4/0A		
B Estimated result. Result is less than RL.						
Dissolved Gases in Wate	r				Reviewed	
Ethane	ND	0.50	ug/L	RSK SOP-175		
Ethene	ND	0.50	ug/L	RSK SOP-175		
Methane	47	0.50	ug/L	RSK SOP-175		
Volatile Organics by GC	/MS				Reviewed	
Bromomethane	ND	1.0	ug/L	SW846 8260B		
Chloroethane	ND	1.0	ug/L	SW846 8260B		
Chloromethane	ND	1.0	ug/L	SW846 8260B		
Acetone	ND	10	ug/L	SW846 8260B		
Bromodichloromethane	ИD	1.0	ug/L	SW846 8260B		
Bromoform	ND	1.0	ug/L	SW846 8260B		
2-Butanone	MD	10	ug/L	SW846 8260B		
Carbon disulfide	ND	1.0	ug/L	SW846 8260B		
CONTRACTOR CONTRACTOR SECURITION		1.0	ug/h	SW846 8260B		
Carbon tetrachlorido	MD		1037.11	OMO 10 020(II)		
Carbon tetrachloride	ND		na/f.	SW846 8260D		
Chlorobenzene	ИD	1.0	ug/h	SW846 8260B		
Chlorobenzene Dibromochloromethane	ND ND	1.0 1.0	ug/L	SW846 8260B		
Chlorobenzene	ИD	1.0				

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change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Project Number: 00507 REPORTING ANALYTICAL LIMIT UNITS PARAMETER RESULT METHOD Client Sample ID: PZ-05 (130) Sample #: 002 Date Sampled: 10/08/03 09:00 Date Received: 10/09/03 Matrix: WATER Volatile Organics by GC/MS Reviewed 1,2-Dichloropropane 1.0 SW846 8260B NDug/L cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ND 10 ug/L SW846 8260B SW846 8260B Styrene ИD 1.0 ug/L 1,1,2,2-Tetrachloroethane 1.0 SW846 8260B ИD ug/L 1,1,2-Trichloroethane 1.0 SW846 8260B ND ug/L 1.0 SW846 8260B Benzene ND ug/L 1,1-Dichloroethane SW846 8260B ND 1.0 ug/L 0.50 SW846 8260B cis-1,2-Dichloroethene ИD ug/L trans-1,2-Dichloroethene 0.50 SW846 8260B ND ug/L SW846 8260B 1,1-Dichloroethene 1.0 ND ug/L Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride SW846 8260B ND 1.0 ug/L SW846 8260B Naphthalene 1.0 ug/L ND ug/L SW846 8260B Tetrachloroethene 1.0 ND Toluene ND 1.0 SW846 8260B ug/L ug/L 1,1,1-Trichloroethane ND 1.0 SW846 8260B 1.0 SW846 8260B Trichloroethene ND ug/L 1,2,4-Trimethylbenzene ND 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene ND 1.0 ug/L SW846 8260B Vinyl chloride ND 1.0 ug/L SW846 8260B Xylenes (total) ND 1.0 ug/L SW846 8260B Reviewed Inorganic Analysis 260 5.0 Alkalinity mg/L MCAWW 310.1 Chloride 5.6 1.0 mg/L MCAWW 300.0A

(Continued on next page)

0.10

1.0

1

mg/L

mg/L

mq/L

MCAWW 300.0A

MCAWW 300.0A

MCAWW 415.1

0.28

5.5

Nitrate as N

Total Organic Carbon

Sulfate

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

#: A3J090307	ONALASKA LANDFILI	R Consulting & Engineering LASKA LANDFILL - WISCONSIN Project Number: 00507 REPORTING		Date Reported:	PAGE 5 10/28/03
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: MW-4S (1 Sample #: 003 Date Samp	<b>20)</b> pled: 10/08/03 08:3	0 Date Re	eceived:	10/09/03 Matrix:	: WATER
Trace Inductively Couple	d Plasma (ICP) Meta	ıls			Reviewed
Arsenic	0.0091 B	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plas	ma (ICP) Metals				Reviewed
Barium	0.29	0.20	mg/L	SW846 6010B	
Iron	18.9	0.10	mg/L	SW846 6010B	
Manganese	2.1	0.015	mg/L	SW846 6010B	
Mercury	(Manual Cold-Vapor) ND	0.00020	mg/L	SW846 7470A	Reviewed
Mercury  B Estimated result. Result is less than RL.	ND		mg/L	SW846 7470A	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water	ND	0.00020			Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane	ND ND	0.00020 5.0	ug/L	RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water	ND	0.00020			
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane	ND ND ND 1400	0.00020 5.0 5.0	ug/L ug/L	RSK SOP-175 RSK SOP-175	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/	ND ND ND 1400	0.00020 5.0 5.0 5.0	ug/L ug/L <b>ug/L</b>	RSK SOP-175 RSK SOP-175 RSK SOP-175	
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane	ND ND ND 1400 MS	0.00020 5.0 5.0 5.0	ug/L ug/L <b>ug/L</b> ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane Chloroethane	ND ND ND 1400 MS ND ND	0.00020 5.0 5.0 5.0	ug/L ug/L <b>ug/L</b> ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane Chloroethane Chloromethane	ND ND ND 1400 MS ND ND ND	0.00020 5.0 5.0 5.0	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane Chloroethane Chloromethane Acetone	ND ND ND 1400 MS ND ND ND ND ND	5.0 5.0 5.0 5.0	ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane	ND ND 1400 MS ND ND ND ND ND ND ND	0.00020 5.0 5.0 5.0 5.0 83 83 83 83 83 83	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform	ND ND ND 1400 MS ND ND ND ND ND ND ND ND ND	5.0 5.0 5.0 5.0 83 83 83 83 83 83	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone	ND ND 1400 MS ND	0.00020 5.0 5.0 5.0 5.0 83 83 83 83 83 83 83	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethene Methane  Volatile Organics by GC/Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide	ND ND ND 1400 MS ND	0.00020 5.0 5.0 5.0 5.0 83 83 83 83 83 83 83 83 83	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND ND ND 1400 MS ND	0.00020 5.0 5.0 5.0 5.0 83 83 83 83 83 83 83 83 83 83	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride Chlorobenzene	ND ND ND 1400  MS ND	0.00020 5.0 5.0 5.0 5.0 83 83 83 83 83 83 83 83 83 83	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewed
Mercury  B Estimated result. Result is less than RL.  Dissolved Gases in Water Ethane Ethane Ethene Methane  Volatile Organics by GC/ Bromomethane Chloroethane Chloromethane Acetone Bromodichloromethane Bromoform 2-Butanone Carbon disulfide Carbon tetrachloride	ND ND ND 1400 MS ND	0.00020 5.0 5.0 5.0 5.0 83 83 83 83 83 83 83 83 83 83	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RSK SOP-175 RSK SOP-175 RSK SOP-175 SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B	Reviewed

The results shown below may still require additional laboratory review and are subject to

•	R Consult LASKA LAN Project 1	DFILL -	- WISC	ONSIN	Date Re	eported:	PAGE 6
	-	P	REPORT	ING		YTICAL	
PARAMETER	RESUL'	<u>r                                      </u>	JIMIT	UNITS	METHO	)D	
Client Sample ID: MW-4S (120) Sample #: 003 Date Sampled:	10/08/03	08:30	Date	Received:	10/09/03	Matrix:	WATER
Volatile Organics by GC/MS							Reviewed
1,2-Dichloropropane	ND	8	13	ug/L	SW846	8260B	
cis-1,3-Dichloropropene	ND		13	ug/L		6 8260B	
trans-1,3-Dichloropropene	ND		13	ug/L		8260B	
2-Hexanone	ND		130	ug/L		6 8260B	
4-Methyl-2-pentanone	ND		30	ug/L		8260B	
Styrene	ND		13	ug/L		8260B	
1,1,2,2-Tetrachloroethane	ND		13	ug/L		5 8260B	
1,1,2-Trichloroethane	ND		13	ug/L		8260B	
Benzene	ND		13	ug/L		5 8260B	
1,1-Dichloroethane	ND		13	ug/L		5 8260B	
cis-1,2-Dichloroethene	ND		2	ug/L		5 8260B	
trans-1,2-Dichloroethene	ND		2	ug/L		6 8260B	
1,1-Dichloroethene	ND		13	ug/L		8260B	
Ethylbenzene	38 Ј		3	ug/L		6 8260B	
Methylene chloride	ND		13	ug/L		6 8260B	
Naphthalene	20 J		3	ug/L		6 8260B	
Tetrachloroethene	ND		13	ug/L		5 8260B	
Toluene	ND		13	ug/L		6 8260B	
1,1,1-Trichloroethane	ND		13	ug/L		8260B	
Trichloroethene	ND		13	ug/L		6 8260B	
1,2,4-Trimethylbenzene	1100		33	ug/L		6 8260B	
1,3,5-Trimethylbenzene	230		3	ug/L		6 8260B	
Vinyl chloride	ND		13	ug/L		6 8260B	
Xylenes (total)	160		33	ug/L		6 8260B	
J Estimated result. Result is less than RL.							
Inorganic Analysis							Reviewed
Alkalinity	290	I.	5.0	mq/L	MCAWI	W 310.1	
Chloride	7.7		1.0	mq/L		W 300.0A	
Nitrate as N	ND		).10	mg/L		√ 300.0A	

B Estimated result. Result is less than RL.

Total Organic Carbon

Sulfate

(Continued on next page)

0.15 B 1.0

mg/L

mg/L

MCAWW 300.0A

MCAWW 415.1

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J090307	ONALASKA LANDFIL	GR Consulting & Engineering ALASKA LANDFILL - WISCONSIN Date Reported: Project Number: 00507			
	<b>3</b>	REPORTING	G	ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Client Sample ID: MW-8S (					
Sample #: 004 Date Sam	mpled: 10/07/03 20:	00 Date Re	eceived:	10/09/03 Matrix:	WATER
Trace Inductively Couple	ed Plasma (ICP) Meta	als			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
· · · · · · · · · · · · · · · · · · ·		0.0070	g/ 11	54010 00102	
Inductively Coupled Plan	sma (ICP) Metals				Reviewed
Barium	0.093 B	0.20	mg/L	SW846 6010B	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	0.32	0.015	mg/L	SW846 6010B	
Margury in Liquid Wests	(Manual Cald Hanan	1			Daniana
Mercury in Liquid Waste Mercury	-	0.00020	/T	CMO46 74707	Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.					
Dissolved Gases in Wate:	r				Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	6.2	0.50	ug/L	RSK SOP-175	
Volatile Organics by GC	/MS				Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ИD	10	ug/L	SW846 8260B	
Bromodichloromethane	ИÐ	1.0	ug/L	SW846 8260B	
Bromoform	ИD	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ИD	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	MD	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

\_\_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-8S (124) Sample #: 004 Date Sampled: 10/07/03 20:00 Date Received: 10/09/03 Matrix: WATER Volatile Organics by GC/MS Reviewed ug/L 1,2-Dichloropropane ND 1.0 SW846 8260B ND 1.0 ug/L cis-1,3-Dichloropropene SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND 10 ug/L SW846 8260B 4-Methyl-2-pentanone ND 10 SW846 8260B ug/L ND 1.0 uq/L SW846 8260B Styrene 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 SW846 8260B ug/L SW846 8260B Benzene ND 1.0 ug/L 1,1-Dichloroethane ND 1.0 ug/L SW846 8260B ug/L cis-1,2-Dichloroethene ND 0.50 SW846 8260B ND trans-1,2-Dichloroethene 0.50 ug/L SW846 8260B 1,1-Dichloroethene ND 1.0 SW846 8260B ug/L Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride ND 1.0 ug/L SW846 8260B Naphthalene ND 1.0 ug/L SW846 8260B Tetrachloroethene ND 1.0 ug/L SW846 8260B Toluene ND 1.0 ug/L SW846 8260B 1,1,1-Trichloroethane ND 1.0 SW846 8260B ug/L ND Trichloroethene 1.0 SW846 8260B ug/L 1,2,4-Trimethylbenzene ND 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene ND 1.0 ug/L SW846 8260B 1.0 Vinyl chloride ND ug/L SW846 8260B Xylenes (total) ND 1.0 ug/L SW846 8260B Inorganic Analysis Reviewed 230 5.0 ' mq/L MCAWW 310.1 Alkalinity 17.2 1.0 Chloride mg/L MCAWW 300.0A Nitrate as N 0.150.10 MCAWW 300.0A mg/L

(Continued on next page)

1.0

mq/L

mq/L

5.6

Sulfate

Total Organic Carbon

MCAWW 300.0A

MCAWW 415.1

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_ ENSR Consulting & Engineering PAGE ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Lot #: A3J090307 Project Number: 00507 ANALYTICAL REPORTING PARAMETER LIMIT UNITS METHOD RESULT Client Sample ID: MW-8M (125) Sample #: 005 Date Sampled: 10/07/03 20:10 Date Received: 10/09/03 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.010 mq/L SW846 6010B 0.0020 Cadmium ND mq/L SW846 6010B 0.0070 mq/L SW846 6010B Cobalt ND Lead ND 0.0030 mq/L SW846 6010B Vanadium 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed 0.20 mg/L SW846 6010B Iron 0.045 B 0.10 mg/L SW846 6010B Manganese 2.8 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed Mercury ND 0.00020 mg/L SW846 7470A B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 0.50 ug/L RSK SOP-175 Ethene ND 0.50 ug/L RSK SOP-175 Methane 110 0.50 RSK SOP-175 ug/L

(Continued on next page)

1.0

1.0

1.0

10

1.0

1.0

10

1.0

1.0

1.0

1.0

1.0

1.0

ug/L

ug/L

uq/L

ug/L

uq/L

ug/L

ug/L

ug/L

uq/L

ug/L

ug/L

uq/L

ug/L

ND

ND

ND

ND

ND

MD

MD

ND

ND

ND

ND

ND

ND

Reviewed

SW846 8260B

SW846 8260B SW846 8260B

SW846 8260B SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

Volatile Organics by GC/MS

Bromodichloromethane

Carbon tetrachloride

Dibromochloromethane

1,2-Dichloroethane

Carbon disulfide

Chlorobenzene

Bromomethane

Chloroethane

Acetone

Bromoform

2-Butanone

Chloroform

Chloromethane

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

\_\_\_\_\_\_ ENSR Consulting & Engineering PAGE 10 ONALASKA LANDFILL - WISCONSIN Lot #: A3J090307 Date Reported: 10/28/03 Project Number: 00507 REPORTING ANALYTICAL UNITS METHOD PARAMETER RESULT LIMIT Client Sample ID: MW-8M (125) Date Sampled: 10/07/03 20:10 Date Received: 10/09/03 Matrix: WATER Sample #: 005 Volatile Organics by GC/MS Reviewed 1,2-Dichloropropane 1.0 uq/L SW846 8260B cis-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B trans-1,3-Dichloropropene ND 1.0 ug/L SW846 8260B 2-Hexanone ND 10 uq/L SW846 8260B 4-Methyl-2-pentanone ND 10 uq/L SW846 8260B Styrene ND 1.0 uq/L SW846 8260B 1,1,2,2-Tetrachloroethane ND 1.0 ug/L SW846 8260B 1,1,2-Trichloroethane ND 1.0 ug/L SW846 8260B Benzene ND 1.0 ug/L SW846 8260B 1,1-Dichloroethane ND 1.0 ug/L SW846 8260B cis-1,2-Dichloroethene ND 0.50 uq/L SW846 8260B trans-1,2-Dichloroethene ND 0.50 ug/L. SW846 8260B 1,1-Dichloroethene ND 1.0 ug/L SW846 8260B Ethylbenzene ND 1.0 ug/L SW846 8260B Methylene chloride ND 1.0 ug/L SW846 8260B Naphthalene ND 1.0 uq/L SW846 8260B Tetrachloroethene ND 1.0 ug/L SW846 8260B SW846 8260B Toluene ND 1.0 ug/L 1,1,1-Trichloroethane ND 1.0 ug/L SW846 8260B Trichloroethene 0.23 J 1.0 uq/L SW846 8260B 1,2,4-Trimethylbenzene 0.36 J 1.0 ug/L SW846 8260B 1,3,5-Trimethylbenzene 0.22 J 1.0 uq/L SW846 8260B Vinyl chloride 1.0 ug/L SW846 8260B ND 1.0 SW846 8260B Xylenes (total) ND ug/L J Estimated result. Result is less than RL. Reviewed Inorganic Analysis Alkalinity 240 5.0 mg/L MCAWW 310.1 Chloride 12.8 1.0 mq/L MCAWW 300.0A Nitrate as N ND 0.10 MCAWW 300.0A mg/L 1.0 MCAWW 300.0A Sulfate 1.1 mq/L 1 MCAWW 415.1 Total Organic Carbon mq/L

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

t #: A3J090307	ENSR Consulting ONALASKA LANDFIL Project Numb	L - WISCONS	-	Date Reported:	PAGE 1 10/28/03
	REPO		3	ANALYTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METHOD	
Oliont Comple TD MW 120 /12	261				
Client Sample ID: MW-12S (1: Sample #: 006 Date Samp.		35 Date Re	eceived:	10/09/03 Matrix:	WATER
Trace Inductively Coupled	Plasma (ICP) Met	als			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	0.0013 B	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasm	a (TCP) Metals				Reviewed
Barium	0.021 B	0.20	mg/L	SW846 6010B	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	0.0017 B	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (	Manual Cold-Vanor	· )			Reviewed
Mercury in Liquid waste (	Manuar Cord-Vapor ND	0.00020	mg/L	SW846 7470A	Vertewed
B Estimated result. Result is less than RL.					
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	12 ~ /T	RSK SOP-175	келтемеа
Ethene		0.50	ug/L	RSK SOP-175	
Methane	ND ND	0.50	ug/L ug/L	RSK SOP-175	
Volatile Organics by GC/M	S				Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ИD	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ИО	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ПA	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND .	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ИD	1.0	ug/L	SW846 8260B	
Chloroform	ИD	1.0	ug/L	SW846 8260B	
			J :		

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. 

ENSR Consulting & Engineering

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ONALASKA LANDFILL - WISCONSIN Lot #: A3J090307

Date Reported: 10/28/03

Project Number: 00507

REPORTING

ANALYTICAL METHOD PARAMETER RESULT LIMIT UNITS

Client	Sample	ID:	MW-12S	(126)
--------	--------	-----	--------	-------

Sample #: 006 Date Sampled: 10/07/03 20:35 Date Received: 10/09/03 Matrix: WATER

Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	210	5.0	mq/L	MCAWW 310.1	
Chloride	9.1	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	1.4	0.10	mg/L	MCAWW 300.0A	
Sulfate	5.0	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	0.8 В	1.	mg/L	MCAWW 415.1	

B Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_ ENSR Consulting & Engineering PAGE Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: MW-5S (121) Sample #: 007 Date Sampled: 10/07/03 17:35 Date Received: 10/09/03 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.022 0.010 mg/L SW846 6010B Cadmium ND 0.0020 mq/L SW846 6010B Cobalt 0.0058 B 0.0070 mg/L SW846 6010B 0.0030 Lead ND mg/L SW846 6010B Vanadium 0.0070 SW846 6010B mg/L Inductively Coupled Plasma (ICP) Metals Reviewed mg/L SW846 6010B 0.27 0.20 Iron 30.5 SW846 6010B 0.10 mg/L Manganese 2.3 0.015 mg/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed 0.000075 B 0.00020 mq/L SW846 7470A Mercury B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 5.0 uq/L RSK SOP-175 Ethene ND 5.0 ug/L RSK SOP-175 Methane 910 5.0 ug/L RSK SOP-175 Volatile Organics by GC/MS Reviewed Bromomethane ND 67 uq/L SW846 8260B Chloroethane ND 67 ug/L SW846 8260B Chloromethane ND 67 ug/L SW846 8260B 670 Acetone ug/L SW846 8260B Bromodichloromethane 67 SW846 8260B ND ug/L Bromoform ND 67 uq/L SW846 8260B 670 2-Butanone ND uq/L SW846 8260B

(Continued on next page)

67

67

67

67

67

67

ug/L

ug/L

uq/b

ug/L

ug/L

ug/L

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

SW846 8260B

ND

ND

ND

ND

ND

MD

Carbon disulfide

Chlorobenzene

Chloroform

Carbon tetrachloride

Dibromochloromethane

1,2-Dichloroethane

The results shown below may still require additional laboratory review and are subject to

	<mark>R Consultin</mark> g LASKA LANDF1 Project Num	LL - WISC	ONSIN	Date R	eported:	PAGE 1 10/28/03
	REPORTING				YTICAL	
PARAMETER	RESULT	LIMIT	UNITS	METH	OD	
Client Sample ID: MW-5S (121)						
Sample #: 007 Date Sampled:	10/07/03 17	:35 Date	Received:	10/09/03	Matrix:	WATER
Volatile Organics by GC/MS						Reviewed
1,2-Dichloropropane	ND	67	ug/L	SW84	6 8260B	
cis-1,3-Dichloropropene	ND	67	ug/L	SW84	6 8260B	
trans-1,3-Dichloropropene	ND	67	ug/L	SW84	6 8260B	
2-Hexanone	ND	670	ug/L	SW84	6 8260B	
4-Methyl-2-pentanone	ND	670	ug/L	SW84	6 8260B	
Styrene	ND	67	ug/L	SW84	6 8260B	
1,1,2,2-Tetrachloroethane	ND	67	ug/L	SW84	6 8260B	
1,1,2-Trichloroethane	ND	67	ug/L	SW84	6 8260B	
Benzene	ND	67	ug/L	SW84	6 8260B	
1,1-Dichloroethane	ND	67	ug/L	SW84	6 8260B	
cis-1,2-Dichloroethene	ND	33	ug/L	SW84	6 8260B	
trans-1,2-Dichloroethene	ND	33	ug/L	SW84	6 8260B	
1,1-Dichloroethene	ND	67	ug/L	SW84	6 8260B	
Ethylbenzene	29 J	67	ug/L	SW84	6 826 <b>0</b> B	
Methylene chloride	ND	67	ug/L	SW84	6 8260B	
Naphthalene	28 J	67	ug/L	SW84	6 8260B	
Tetrachloroethene	ND	67	ug/L	SW84	6 8260B	
Toluene	ND	67	ug/L	SW84	6 8260B	
1,1,1-Trichloroethane	ND	67	ug/L	SW84	6 8260B	
Trichloroethene	ND	67	ug/L	SW84	6 8260B	
1,2,4-Trimethylbenzene	750	67	ug/L	SW84	6 826 <b>0</b> B	
1,3,5-Trimethylbenzene	200	67	µg/L	SW84	6 8260B	
Vinyl chloride	ND	67	ug/L	SW84	6 8260B	
Xylenes (total)	150	67	ug/L	SW84	6 8260B	
J Estimated result. Result is less than RL.						
Inorganic Analysis						Reviewed
Alkalinity	180	5.0	mq/L	MCAW	W 310.1	
Chloride	4.3	1.0	mg/L		W 300.0A	
Nitrate as N	0.020 в	0.10	mq/L		W 300.0A	
Sulfate	0.16 B	1.0	mq/L		w 300.0A	

B Estimated result. Result is less than RL.

Total Organic Carbon

(Continued on next page)

mg/L

MCAWW 415.1

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. 

ENSR Consulting & Engineering PAGE 15 Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER LIMIT UNITS METHOD Client Sample ID: MW-2S (117) Date Sampled: 10/07/03 18:30 Date Received: 10/09/03 Matrix: WATER Sample #: 008 Reviewed Trace Inductively Coupled Plasma (ICP) Metals SW846 6010B Arsenic 0.011 0.010 mg/L Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.0019 B 0.0070 mq/L SW846 6010B ND 0.0030 mg/L SW846 6010B Lead 0.0013 B 0.0070 SW846 6010B Vanadium mg/L Inductively Coupled Plasma (ICP) Metals Reviewed SW846 6010B mg/L Barium 0.18 B 0.20 40.0 SW846 6010B Iron 0.10mg/L Manganese 3.0 0.015 SW846 6010B mg/L Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed Mercury 0.00020 mg/L SW846 7470A B Estimated result. Result is less than RL. Dissolved Gases in Water Reviewed Ethane ND 5.0 ug/L RSK SOP-175 Ethene ND 5.0 ug/L RSK SOP-175 Methane 870 5.0 ug/L RSK SOP-175 Volatile Organics by GC/MS Reviewed Bromomethane ND 1.0 ug/L SW846 8260B Chloroethane ND 1.0 uq/L SW846 8260B SW846 8260B Chloromethane ND 1.0 ug/L ИD 1.0 ug/L SW846 8260B Acetone Bromodichloromethane ND 1.0 uq/L SW846 8260B 1.0 Bromoform ND ug/L SW846 8260B 2-Butanone ND 1.0 ug/L SW846 8260B Carbon disulfide ND 1.0 ug/L SW846 8260B Carbon tetrachloride 1.0 MD ug/L SW846 8260B Chlorobenzene 1.3 1.0 uq/LSW846 8260B

(Continued on next page)

1.0

1.0

1.0

uq/L

ug/L

uq/L

SW846 8260B

SW846 8260B

SW846 8260B

ND

ND

MD

Dibromochloromethane

1,2-Dichloroethane

Chloroform

The results shown below may still require additional laboratory review and are subject to ch

	GR Consult ALASKA LAN Project	DFILL Number	- WISC	ONSIN 7		eported:	PAGE 1 10/28/03
PARAMETER	RESUL		LIMIT	UNITS	METH		
Client Sample ID: MW-2S (117)							
Sample #: 008 Date Sampled:	10/07/03	18:30	Date	Received:	10/09/03	Matrix:	WATER
Volatile Organics by GC/MS							Reviewed
1,2-Dichloropropane	ND		1.0	ug/L	SW84	6 8260B	
cis-1,3-Dichloropropene	ND		1.0	ug/L	SW84	6 8260B	
trans-1,3-Dichloropropene	ND		1.0	ug/L	SW84	5 8260B	
2-Hexanone	ND		10	ug/L	SW84	6 8260B	
4-Methyl-2-pentanone	ND		10	ug/L	SW84	6 8260B	
Styrene	ND		1.0	ug/L	SW84	5 8260B	
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L	SW84	6 8260B	
1,1,2-Trichloroethane	ND		1.0	ug/L	SW84	6 8260B	
Benzene	1.3		1.0	ug/L	SW84	6 8260B	
1,1-Dichloroethane	ND		1.0	ug/L	SW84	6 8260B	
cis-1,2-Dichloroethene	ND		0.50	ug/L	SW84	6 8260B	
trans-1,2-Dichloroethene	ND		0.50	ug/L	SW84	6 8260B	
1,1-Dichloroethene	ND		1.0	ug/L	SW84	6 8260B	
Ethylbenzene	ND		1.0	ug/L	SW84	6 8260B	
Methylene chloride	ND		1.0	ug/L	SW84	6 8260B	
Naphthalene	ND		1.0	ug/L	SW84	6 8260B	
Tetrachloroethene	ND		1.0	ug/L	SW84	6 8260B	
Toluene	ND		1.0	ug/L	SW84	6 8260B	
1,1,1-Trichloroethane	ND		1.0	ug/L	SW84	6 8260B	
Trichloroethene	ND		1.0	ug/L	SW84	6 8260B	
1,2,4-Trimethylbenzene	0.14	J	1.0	${ m ug/L}$	SW84	6 8260B	
1,3,5-Trimethylbenzene	ND		1.0	ug/L	SW84	6 8260B	
Vinyl chloride	ND		1.0	ug/L	SW84	6 8260B	
Xylenes (total)	ND		1.0	ug/L	SW84	6 8260B	
J Estimated result. Result is less than RL.							
Inorganic Analysis							Reviewed
Alkalinity	230		5.0	mg/L	MCAW	w 310.1	
Chloride	12.8		1.0	mg/L	MCAW	w 300.0A	
Nitrate as N	ND		0.10	mg/L	MCAW	W 300.0A	
Sulfate	0.25		1.0	mq/L		W 300.0A	

 $<sup>{\</sup>sf B}$  . Estimated result, Result is less than RL.

Total Organic Carbon

(Continued on next page)

mg/L MCAWW 415.1

5

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. 

ENSR Consulting & Engineering

PAGE 17

ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Lot #: A3J090307

Project Number: 00507

REPORTING

ANALYTICAL

METHOD PARAMETER LIMIT UNITS

Client Sample ID: MW-2M (118)

Sample #: 009 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER

Trace Inductively Coupled Plasma	a (ICP) Meta	ıls			Reviewed
Arsenic	0.020	0.010	mg/L	SW846 601 <b>0B</b>	1.0.1201.00
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
			-		
Inductively Coupled Plasma (ICP)	Metals				Reviewed
Barium	0.42	0.20	mg/L	SW846 6010B	
Iron	6.4	0.10	mg/L	SW846 601 <b>0</b> B	
Manganese	0.41	0.015	mg/L	SW846 601 <b>0</b> B	
Mercury in Liquid Waste (Manual	Cold-Vapor)				Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	Reviewed
rioueda y	112	0.00020	11197 11	5	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	130	0.50	ug/L	RSK SOP-175	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	uq/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	1.0	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ИД	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ИD	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

PAGE 18

Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03

Project Number: 00507

REPORTING ANALYTICAL RESULT METHOD PARAMETER LIMIT UNITS

Client Sample ID: MW-2M (118)

Sample #: 009 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER

Volatile Organics by GC/MS				Reviewed	Reviewed	l
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	SW846 8260B	
					<b>.</b>	,
Inorganic Analysis	110	F 0	1-		Reviewed	Į
Alkalinity	110	5.0	mg/L	MCAWW 310.1		
Chloride	6.9	1.0	mg/L	MCAWW 300.0A		
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A		
Sulfate	ИD	1.0	mg/L	MCAWW 300.0A		
Total Organic Carbon	4	1	mg/L	MCAWW 415.1	MCAWW 415.1	

Client Sample ID: TRIP(COC# 133874)

Sample #: 010 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

PAGE 19 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03

Lot #: A3J090307 Project Number: 00507

REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: TRIP(COC# 133874)

Sample #: 010 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER

Volatile Organics by GC/MS				R	eviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	1.0 J	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	0.45 J	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ИÐ	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ИD	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5~Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/h	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user. \_\_\_\_\_\_\_

ENSR Consulting & Engineering

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Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03

Project Number: 00507

ANALYTICAL

PARAMETER

RESULT

LIMIT UNITS

REPORTING

METHOD

Client Sample ID: TRIP(COC# 133874)

Sample #: 010 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER

Reviewed

Volatile Organics by GC/MS

J Estimated result. Result is less than RL.

Client Sample ID: AW-09 (132)

Sample #: 011 Date Sampled: 10/08/03 13:15 Date Received: 10/09/03 Matrix: WATER

,	Trace Inductively Coupled Plasma	(ICP) Meta	ls			Reviewed
	Arsenic	ND	0.010	mg/L	SW846 6010B	
	Cadmium	ND	0.0020	mg/L	SW846 6010B	
	Cobalt	ND	0.0070	mg/L	SW846 6010B	
	Lead	ND	0.0030	mg/L	SW846 6010B	
	Vanadium	ND	0.0070	mg/L	SW846 6010B	
	Inductively Coupled Plasma (ICP)	Metals				Reviewed
	Barium	0.19 B	0.20	mg/L	SW846 6010B	
	Iron	0.11	0.10	mg/L	SW846 6010B	
	Manganese	0.24	0.015	mg/L	SW846 6010B	
1	Mercury in Liquid Waste (Manual	Cold-Vapor)				Reviewed
	Mercury	ND	0.00020	mg/L	SW846 7470A	
	B Estimated result. Result is less than RL.					
]	Dissolved Gases in Water					Reviewed
	Ethane	ND	1.0	ug/L	RSK SOP-175	
	Ethene	ND	10	ug/L	RSK SOP-175	
	Methane	340	1.0	ug/L	RSK SOP-175	
	ti i i i a a a a a a a a a a a a a a a a					
	Volatile Organics by GC/MS		4 0	45		Reviewed
	Bromomethane	ND	1.0	ug/L	SW846 8260B	
	Chloroethane	ND	1.0	ug/L	SW846 8260B	
	Chloromethane	ND	1.0	ug/L	SW846 8260B	
	Acetone	ND	10	ug/L	SW846 8260B	
	Bromodichkoromethane	MD	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J090307

ENSR Consulting & Engineering ONALASKA LANDFILL - WISCONSIN

PAGE 21 Date Reported: 10/28/03

Project Number: 00507

ANALYTICAL

PARAMETER

LIMIT UNITS

REPORTING

METHOD

Client Sample ID: AW-09 (132)

Sample #: 011 Date Sampled: 10/08/03 13:15 Date Received: 10/09/03 Matrix: WATER

Volatile Organics by GC/MS					Reviewed
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ИD	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ИО	1.0	ug/L	SW846 8260B	
Xylenes (total)	0.61 J	1.0	ug/L	SW846 8260B	

J. Estimated result. Result is less than RL.

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

PAGE 22 Date Reported: 10/28/03

Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN
Project Number: 00507

REPORTING

ANALYTICAL

PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: AW-09 (132)

Sample #: 011 Date Sampled: 10/08/03 13:15 Date Received: 10/09/03 Matrix: WATER

Inorganic Analysis				Reviewed
Alkalinity	190	5.0	mg/L	MCAWW 310.1
Chloride	6.9	1.0	mg/L	MCAWW 300.0A
Nitrate as N	0.070 B	0.10	mg/L	MCAWW 300.0A
Sulfate	5.4	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	2	1	mg/L	MCAWW 415.1

B Estimated result. Result is less than RL.

Client	Sample	ID:	PZ-01	(129)
--------	--------	-----	-------	-------

Sample #: 012 Date Sampled: 10/08/03 13:00 Date Received: 10/09/03 Matrix: WATER

Trace Inductively Coupled Plasm	a (ICP) Meta	als			Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	0.0012 B	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP	) Metals				Reviewed
Barium	0.033 B	0.20	mg/L	SW846 6010B	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	0.37	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (Manual	Cold-Vapor	ı			Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.			,		
Dissolved Gases in Water					Reviewed
Ethane	ИD	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	48	0.50	$\mathrm{ug/L}$	RSK SOP-175	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

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ENSR Consulting & Engineering

PAGE 23

ONALASKA LANDFILL - WISCONSIN Lot #: A3J090307

Date Reported: 10/28/03

Project Number: 00507

REPORTING

ANALYTICAL

PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: PZ-01 (129)

Sample #: 012 Date Sampled: 10/08/03 13:00 Date Received: 10/09/03 Matrix: WATER

Volatile Organics by GC/MS				Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Acetone	ND	10	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	$\mathtt{ug}/\mathtt{L}$	SW846 8260B
2-Butanone	ND	10	${ m ug/L}$	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B"
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	10	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ИD	1.0	ug/L	SW846 8260B
Methylene chloride	ИD	1.0	ug/L	SW846 8260B
Naphthalene	ИD	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ИЮ	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	MD	1.0	ug/L	SW846 8260B

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER METHOD RESULT LIMIT UNITS Client Sample ID: PZ-01 (129) Date Sampled: 10/08/03 13:00 Date Received: 10/09/03 Matrix: WATER Sample #: 012 Volatile Organics by GC/MS Reviewed 1.0 Xylenes (total) ND ug/L SW846 8260B Inorganic Analysis Reviewed 190 5.0 mq/L Alkalinity MCAWW 310.1 Chloride 5.8 1.0 mg/L MCAWW 300.0A Nitrate as N ND 0.10 mq/L MCAWW 300.0A Sulfate 6.1 1.0 mg/L MCAWW 300.0A Total Organic Carbon 2 mq/L MCAWW 415.1 Client Sample ID: MW-14S (127) Date Sampled: 10/08/03 12:40 Date Received: 10/09/03 Matrix: WATER Sample #: 013 Trace Inductively Coupled Plasma (ICP) Metals Reviewed 0.010 mg/L SW846 6010B Arsenic ND Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.0070 ND mg/L SW846 6010B Lead ND 0.0030 mg/L SW846 6010B Vanadium 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.19 B mq/L SW846 6010B 0.20 17.8 Iron 0.10mg/L SW846 6010B mg/L Manganese 7.0 0.015 SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed

0.00020

5.0

5.0

5.0

mq/L

ug/L

nq/L

ug/L

SW846 7470A

RSK SOP-175

RSK SOP-175

RSK SOP-175

Reviewed

(Continued on next page)

ND

MD

MD

1200

Mercury

Ethane

Ethene

Methane

B Estimated result. Result is less than RL.

Dissolved Gases in Water

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J090307

ENSR Consulting & Engineering

ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03

Project Number: 00507

REPORTING

ANALYTICAL

PAGE 25

PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: MW-14S (127)

Sample #: 013 Date Sampled: 10/08/03 12:40 Date Received: 10/09/03 Matrix: WATER

			Reviewed
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	50	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	50	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	50	ug/L	SW846 8260B
ND	50	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
ND	2.5	ug/L .	SW846 8260B
ND	2.5	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
1.2 J	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846 8260B
1.8	5.0	ug/L	SW846 8260B
ND	5.0	ug/L	SW846-8260B
ИЮ	5.0	ug/L	SW846-8260B
ND	5.0	ug/h	SW846 8260B
MD	5.0	ug/L	SW846-8260B
5.5	5.0	ug/L	SW846-8260B
1.8 J	5.0	ug/L	SW846-8260B
ND	5.0	ug/L	SW846 8260B
	ND N	ND       5.0         ND       5.0 <td< td=""><td>ND       5.0       ug/L         ND       5.0       ug/L         ND       50       ug/L         ND       5.0       ug/</td></td<>	ND       5.0       ug/L         ND       5.0       ug/L         ND       50       ug/L         ND       5.0       ug/

The results shown below may still require additional laboratory review and are subject to

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering PAGE 26 Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT METHOD LIMIT UNITS Client Sample ID: MW-14S (127) Date Sampled: 10/08/03 12:40 Date Received: 10/09/03 Matrix: WATER Sample #: 013 Volatile Organics by GC/MS Reviewed Xylenes (total) 2.3 J 5.0 uq/L SW846 8260B J Estimated result. Result is less than RL. Elevated reporting limits due to dilution for TICs. Inorganic Analysis Reviewed Alkalinity 170 5.0 mq/L MCAWW 310.1 Chloride 7.3 1.0 mq/L MCAWW 300.0A Nitrate as N ND 0.10 mg/L MCAWW 300.0A Sulfate 0.18 B 1.0 mq/L MCAWW 300.0A Total Organic Carbon 12 mq/L MCAWW 415.1 B Estimated result. Result is less than RL. Client Sample ID: AW-20 (134) Date Sampled: 10/08/03 14:05 Date Received: 10/09/03 Matrix: WATER Sample #: 014 Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic 0.021 0.010 mq/L SW846 6010B Cadmium ND 0.0020 mg/L SW846 6010B Cobalt 0.011 0.0070 mg/L SW846 6010B Lead ND 0.0030 ma/L SW846 6010B Vanadium 0.0029 B 0.0070 mg/L SW846 6010B Inductively Coupled Plasma (ICP) Metals Reviewed Barium 0.38 0.20 ma/L SW846 6010B Tron 50.0 0.10mg/L SW846 6010B Manganese 16.1 0.015 mq/L SW846 6010B Mercury in Liquid Waste (Manual Cold-Vapor) Reviewed

Mercury

(Continued on next page)

0.00020

mq/L

ND

SW846 7470A

B Estimated result. Result is less than Rt.,

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J090307

ENSR Consulting & Engineering

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Date Reported: 10/28/03

ONALASKA LANDFILL - WISCONSIN Project Number: 00507

REPORTING

ANALYTICAL

PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: AW-20 (134)

Sample #: 014 Date Sampled: 10/08/03 14:05 Date Received: 10/09/03 Matrix: WATER

Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	2200	5.0	ug/L	RSK SOP-175	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	20	ug/L	SW846 8260B	Neviewed
Chloroethane	ND	20	ug/L	SW846 8260B	
Chloromethane	ND	20	ug/L	SW846 8260B	
Acetone	ND	200	ug/L	SW846 8260B	
Bromodichloromethane	ND	20	ug/L	SW846 8260B	
Bromoform	ND	20	ug/L	SW846 8260B	
2-Butanone	ND	200	ug/L	SW846 8260B	
Carbon disulfide	ND	20	ug/L	SW846 8260B	
Carbon tetrachloride	ND	20	ug/L	SW846 8260B	
Chlorobenzene	ND	20	ug/L	SW846 8260B	
Dibromochloromethane	ND	20	ug/L	SW846 8260B	
Chloroform	ND	20	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	20	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	20	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	20	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	20	ug/L	SW846 8260B	
2-Hexanone	ND	200	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	200	ug/L	SW846 8260B	
Styrene	ND	20	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	20	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	20	ug/L	SW846 8260B	
Benzene	ND	20	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	20	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	10	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	10	ug/L	SW846 8260B	
1,1-Dichloroethene	ИD	20	ug/L	SW846 8260B	
Ethylbenzene	ND	20	ug/L	SW846 8260B	
Methylene chloride	ND	20	ug/L	SW846 8260B	
Naphthalene	6.8 J	20	ug/L	SW846 8260B	
Tetrachloroethene	ND	20	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user

	ONALASKA LANDF	ISR Consulting & Engineering  ALASKA LANDFILL - WISCONSIN   Project Number: 00507		Date Reported:	PAGE 28 10/28/03
PARAMETER	RESULT	REPORT: LIMIT	ING UNITS	ANALYTICAL METHOD	
FARMETER	KEROLI		UNITS	FETHOD	
Client Sample ID: AW-20 (134	)				
Sample #: 014 Date Sampl	ed: 10/08/03 1	4:05 Date	Received:	10/09/03 Matrix:	WATER
Volatile Organics by GC/MS					Reviewed
Toluene	ND	20	ug/L	SW846 8260B	
1, 1, 1-Trichloroethane	ND	20	ug/L	SW846 8260B	
Trichloroethene	ND	20	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	170	20	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	120	20	${ m ug/L}$	SW846 8260B	
Vinyl chloride	ND	20	ug/L	SW846 8260B	
Xylenes (total)	12 J	20	ug/L	SW846 8260B	
J Estimated result. Result is less than RL.					
Inorganic Analysis					Reviewed
Alkalinity	520	5.0	mq/L	MCAWW 310.1	
Chloride	5.5	1.0	mq/L	MCAWW 300.0A	
Nitrate as N	0.24	0.10	mg/L	MCAWW 300.0A	
Sulfate	0.22 B	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	21	1	mg/L	MCAWW 415.1	
B Estimated result. Result is less than RL.					
Client Sample ID: AW-25 (135 Sample #: 015 Date Sampl		4:25 Date	Received:	10/09/03 Matrix:	WATER
Trace Inductively Coupled					Reviewed
Arsenic	0.013	0.010	mg/L	SW846 6010B	verremed
Cadmium	0.013 ND	0.010	mg/L	SW846 6010B	
Cobalt	טא 0.0020		mg/L	SW846 6010B	
CODAIL	0.0020	D 0.0070	mg/ L	SWOTO OFFICE	

(Continued on next page)

0.0030

0.0070

0.20

0.10

0.015

mg/L

mg/L

mg/L

mg/L

mg/L

ND

0.32

19.6

3.4

Lead

Vanadium

Barium

Manganese

Iron

Inductively Coupled Plasma (ICP) Metals

SW846 6010B

SW846 6010B

SW846 6010B

SW846 6010B

SW846 6010B

Reviewed

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering

PAGE 29

Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03

Project Number: 00507

REPORTING

ANALYTICAL

PARAMETER LIMIT UNITS METHOD RESULT

Client Sample ID: AW-25 (135)

Sample #: 015 Date Sampled: 10/08/03 14:25 Date Received: 10/09/03 Matrix: WATER

Mercury in Liquid Waste (Manual Mercury	Cold-Vapor) ND	0.00020	mg/L	SW846 7470A	Reviewed
B Estimated result. Result is less than RL.					
Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	2200	5.0	ug/L	RSK SOP-175	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	20	ug/L	SW846 8260B	
Chloroethane	ND	20	ug/L	SW846 8260B	
Chloromethane	ND	20	ug/L	SW846 8260B	
Acetone	ND	200	ug/L	SW846 8260B	
Bromodichloromethane	ND	20	ug/L	SW846 8260B	
Bromoform	ND	20	ug/L	SW846 8260B	
2-Butanone	ND	200	ug/L	SW846 8260B	
Carbon disulfide	ND	20	ug/L	SW846 8260B	
Carbon tetrachloride	ND	20	ug/L	SW846 8260B	
Chlorobenzene	ND	20	ug/L	SW846 8260B	
Dibromochloromethane	ND	20	ug/L	SW846 8260B	
Chloroform	ИD	20	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	20	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	20	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	20	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	20	ug/L	SW846 8260B	
2-Hexanone	ИD	200	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ИD	200	ug/L	SW846 8260B	
Styrene	ИD	20	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ИD	20	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	20	ug/L	SW846 8260B	
Benzene	ИD	20	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	20	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	10	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user. ENSR Consulting & Engineering PAGE 30 Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03 Project Number: 00507 REPORTING ANALYTICAL PARAMETER RESULT LIMIT UNITS METHOD Client Sample ID: AW-25 (135) Date Sampled: 10/08/03 14:25 Date Received: 10/09/03 Matrix: WATER Sample #: 015 Volatile Organics by GC/MS Reviewed trans-1,2-Dichloroethene ND 10 ug/L SW846 8260B 1,1-Dichloroethene ND 20 ug/L SW846 8260B Ethylbenzene ND 20 ug/L SW846 8260B Methylene chloride 7.6 J SW846 8260B 20 ug/L 6.8 J SW846 8260B Naphthalene 20 ug/L ND 20 ug/L SW846 8260B Tetrachloroethene ND 20 uq/L SW846 8260B 1,1,1-Trichloroethane ND 20 uq/L SW846 8260B 20 Trichloroethene ND SW846 8260B ug/L 1,2,4-Trimethylbenzene 760 20 ug/L SW846 8260B 1,3,5-Trimethylbenzene 210 20 ug/L SW846 8260B Vinyl chloride ND 20 uq/L SW846 8260B 18 J 20 ug/L SW846 8260B Xylenes (total) J Estimated result. Result is less than RL. Inorganic Analysis Reviewed 290 5.0 Alkalinity mq/L MCAWW 310.1 2.1 Chloride 1.0 mq/L MCAWW 300.0A ND 0.10 MCAWW 300.0A Nitrate as N mg/L 0.77 B Sulfate 1.0 mq/L MCAWW 300.0A Total Organic Carbon 1 mg/L MCAWW 415.1 B Estimated result. Result is less than RL. Client Sample ID: HUBLEY Sample #: 016 Date Sampled: 10/08/03 10:45 Date Received: 10/09/03 Matrix: WATER Trace Inductively Coupled Plasma (ICP) Metals Reviewed Arsenic ND 0.010 mq/L SW846 6010B Cadmi.um MD 0.0020 ma/L SW846 6010B Cobalt NE 0.0070 mq/L SW846 6010B

(Continued on next page)

ND

0.0030

mq/L

SW846 6010B

Lead

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user

	ONALASKA LANDFII	R Consulting & Engineering LASKA LANDFILL - WISCONSIN Project Number: 00507			Date Reported:		
		REPORTING	3	ANALY	FICAL		
PARAMETER	RESULT	LIMIT	UNITS	METHOI	)	************************	
Client Sample ID: HUBLEY Sample #: 016 Date Sampl	ed: 10/08/03 10:	45 Date Re	eceived:	10/09/03	Matrix:	WATER	
Vanadium	ND	0.0070	mg/L	SW846	6010B		
Inductively Coupled Plasma	(ICP) Metals					Reviewed	
Barium	0.087 B	0.20	mg/L	SW846	6010B		
Iron	0.16	0.10	mg/L	SW846	6010B		
Manganese	0.32	0.015	mg/L	SW846	6010B		
Mercury in Liquid Waste (M	anual Cold-Vapor	<u>:</u> )				Reviewed	
Mercury	ND	0.00020	mg/L	SW846	7470A		
Volatile Organics by GC/MS						Reviewed	
Bromomethane	ND	1.0	ug/L	SW846	8260B	Reviewed	
Chloroethane	ND	1.0	ug/L		8260B		
Chloromethane	ND	1.0	ug/L	SW846	8260B		
Acetone	ND	10	ug/L	SW846	8260B		
Bromodichloromethane	ND	1.0	ug/L		8260B		
Bromoform	ND	1.0	ug/L		8260B		
2-Butanone	ND	10	ug/L		8260B		
Carbon disulfide	ND	1.0	ug/L		8260B		
Carbon tetrachloride	ND	1.0	ug/L		8260B		
Chlorobenzene	ND	1.0	ug/L		8260B		
Dibromochloromethane Chloroform	ND ND	1.0 1.0	ug/L ug/L		8260B 8260B		
1,2-Dichloroethane	ND	1.0	ug/L		8260B		
1,2-Dichloropropane	ND	1.0	ug/L		8260B		
cis-1,3-Dichloropropene	ND	1.0	ug/L		8260B		
trans-1,3-Dichloropropen	e ND	1.0	ug/L		8260B		
2-Hexanone	ND	10	ug/L		8260B		
4-Methyl-2-pentanone	ND	10	ug/L		8260B		
Styrene	ND	1.0	ug/L	SW846	8260B		
1,1,2,2-Tetrachloroethan	e ND	1.0	ug/L	SW846	8260B		
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846	8260B		
Benzene	ND	1.0	ug/L		8260B		
1,1-Dichloroethane	ИD	1.0	ug/L	SW846	8260B		

(Continued on next page)

0.50

ug/L

SW846 8260B

cis-1,2-Dichloroethene

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

	ALAS <b>KA LAN</b> I	<mark>ing &amp; E</mark> ngine DFILL - WISC Number: 0050	ONSIN	Date Re	Date Reported:	
PARAMETER	RESULT	REPORT LIMIT	ING UNITS	ANALYTICAL METHOD		
Client Sample ID: HUBLEY						
Sample #: 016 Date Sampled	10/08/03	10:45 Date	Received:	10/09/03	Matrix:	WATER
Volatile Organics by GC/MS						Reviewed
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846	826 <b>0</b> B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846	826 <b>0</b> B	
Ethylbenzene	ND	1.0	ug/L	SW846	8260B	
Methylene chloride	ND	1.0	ug/L	SW846	8260B	
Naphthalene	ND	1.0	ug/L	SW846	8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846	8260B	
Toluene	ND	1.0	ug/L	SW846	8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846	8260B	
Trichloroethene	ND	1.0	ug/L	SW846	826 <b>0</b> B	
1,2,4-Trimethylbenzene	0.18	1.0	ug/L	SW846	826 <b>0B</b>	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846	826 <b>0</b> B	
Vinyl chloride	ND	1.0	ug/L	SW846	826 <b>0</b> B	
vinyi chioride			- J -			

J Estimated result. Result is less than RL.

Client Sample ID: TRIP(COC# 133875)

Sample #: 017 Date Sampled: 10/08/03 10:45 Date Received: 10/09/03 Matrix: WATER

Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 826 <b>0</b> B	
Chloroethane	ND	1.0	ug/L	SW846 826 <b>0</b> B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	0.66 J	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ИD	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ИD	1.0	$\mathrm{ug/L}$	SW846 8260B	
Chloroform	ИD	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	HD	1.0	ug/L	SW846 8260B	

The results shown below may still require additional laboratory review and are subject to

change. Actions taken based on these results are the responsibility of the data user.

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Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN

Date Reported: 10/28/03

Project Number: 00507

REPORTING ANALYTICAL

PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: TRIP(COC# 133875)

Sample #: 017 Date Sampled: 10/08/03 10:45 Date Received: 10/09/03 Matrix: WATER

Volatile Organics by GC/MS					Reviewed
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.