WIDSETH SMITH NOLTING

2015 ANNUAL GROUNDWATER MONITORING REPORT

FOR

CAMP RIPLEY
DEMOLITION LANDFILL
SW-359
Little Falls, Minnesota

Prepared for:

Mr. Mark Erickson
Minnesota Department of Military Affairs
Minnesota Army National Guard Facilities Management Office
Little Falls, MN 56345

January 14, 2016

WSN No. 0283B0009.015

Baxter/Brainerd Office:
7804 Industrial Park Road
P.O. Box 2720
Baxter, MN 56425-2720
Phone: 218-829-5117
Fax: 218-829-2517

WIDSETH SMITH NOLTING

Brainerd/Baxter
7804 Industrial Park Road
PO Box 2720
Baxter, MN 56425-2720

218.829.5117
218.829.2517
Brainerd@wsn.us.com

WidsethSmithNolting.com

January 14, 2016

Mr. Neal Wilson, P.G.
MPCA
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

RE: Camp Ripley Demolition Landfill, SW-359
2015 Annual Groundwater Monitoring Report
WSN No. 0283B0009.015

Dear Mr. Wilson:

This report has been prepared in accordance with Minnesota Rule 7035.2585, item H and Minnesota Rule part 7035.2815, subpart 14, item Q. Item Q requires this report identify recent and long term trends in water elevations and concentrations of monitored constituents. Furthermore, the report should discuss the effect, if any, the Camp Ripley Demolition Landfill (landfill) is having on groundwater and surface water quality, and any recommendations for changes to the system. By permit, the annual volume survey at the landfill is only required in even numbered years.

The landfill is a private landfill within the boundaries of the Camp Ripley Military Reservation. The landfill occupies approximately 17 acres in the North 1/2 of the Northwest ¼ of Section 2, Township 130 North, Range 30 West, Darling Township, Morrison County, Minnesota. The location of the demolition landfill is shown on Figure 1.

The landfill operates under solid waste permit number SW-359, which was originally issued by the MPCA in July 1990. The landfill was re-permitted in August 1995, February 2002, August 2006, and again in 2012. The landfill is currently permitted to accept 75,000 cubic yards of waste and has an ultimate design capacity of 288,000 cubic yards of demolition debris and cover material. The ultimate life of the landfill is approximately 125 years. The landfill only accepts demolition debris generated at Camp Ripley.

The site is located within the central glacial drift region of Minnesota. The topography of the area consists of rolling hills and lowlands generally ranging in elevation from 1,140 ft mean sea level (MSL) to 1,275 ft MSL. Native ground elevation across the landfill site ranges from approximately 1,220 ft MSL to 1,200 ft MSL from west to east.

A paper published by J.J. Quinn of the Environmental Science Division of the Argonne National Laboratory in December 2006, titled Delineation of a Wellhead Protection Zone and Determination of Flow Paths from Potential Groundwater Contaminant Source Areas at Camp Ripley, Little Falls, Minnesota. The following glacial geological summary for the region is an excerpt from this paper:

> "The geology and topography of the Camp Ripley property and its vicinity are the result of a complex glacial depositional history involving three ice lobes that deposited drifts of various characters and colors. These lobes were thought to have been concurrently active in central

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> Minnesota; however, a detailed geologic characterization of the site by UMD (2002) suggests new, previously unrecognized possibilities for the juxtapositioning of the ice lobes and for the nature of the St. Croix moraine at Camp Ripley. The lobes appear to have been present in the Camp Ripley vicinity concurrently, depositing well-sorted sands into an ice-bounded lacustrine basin. Occasional ice advances deposited discontinuous till units in the basin at various elevations."

On site geological information has been collected during various site investigations and monitoring well installations. The boring logs indicate the soil profile typically consists of silty loam topsoil, underlain by two feet of loamy sand, underlain by approximately 40 feet of fine sand. Clay was found below the fine sand at approximately 42- 51 feet below the surface. Wet saturated soils were noted at a depth below 28 feet.

The site is located within the Mississippi River watershed. Surrounding area waterways include the Mississippi River located approximately three miles east of the landfill, the Crow Wing River located approximately 13 miles north of the landfill, and the Little Elk River approximately two miles south-southwest of the landfill. Kraft Lake and the Kraft Lake wetland are less than one-quarter mile to the west and Ferrell Lake lies approximately one-quarter mile northeast of the landfill.

A regional groundwater model (Quinn, 2006) describes the regional groundwater flow direction as southeast at an elevation of approximately 1,170 ft MSL. Groundwater elevation measurements from the current monitoring well system indicate a groundwater flow direction at the site from north to south at an elevation ranging from approximately 1,209 ft MSL to 1,203 ft MSL. Boring logs from past investigations at the site indicate a low permeability clay layer below the landfill monitoring wells. It has been interpreted that the monitoring wells are screened in a perched aquifer with a local groundwater flow direction independent of the regional flow direction (Quinn, 2006).

Regional groundwater geochemistry is influenced by the glacial sediments and bedrock through which the groundwater flows. Land uses such as agriculture and irrigation have also been shown to contribute to the chemical makeup of groundwater in the area. These and other sources have the potential to influence the quality of groundwater monitored by the landfill environmental monitoring system. Water samples collected from upgradient monitoring wells at the site help to determine any influence upgradient groundwater chemistry may have on downgradient sample results.

The groundwater monitoring system at the landfill consists of five monitoring wells (DDLF-1, DDLF-2, DDLF-3, DDLF-4, and DDLF-5). The locations of the five monitoring wells are shown on Figure 2. Groundwater samples and depth to water levels are collected from the monitoring wells in the fall of each year as directed in the SW-359 permit. On November 5, 2015, Widseth Smith Nolting's (WSN) environmental technician, Mike Bogart, collected samples from the two down gradient monitoring wells, DDLF-4 and DDLF-5. Depth to groundwater measurements were collected from all five monitoring wells. The groundwater samples were analyzed for the list of inorganic and organic analytes in the attached Table 1. The required quality assurance samples were collected and analyzed as part of the 2015 sampling event.

The analytical results for the 2015 fall sampling event are summarized in Table 2, Table 3, Table 4, and Table 5. The inorganic and general chemistry parameters are summarized in Table 2 and Table 3. The results in Table 2 indicate minimal change in the water quality when compared to the results for previous years. Generally, the results in Table 3 demonstrate similar results in the water quality when compared to the previous year. Copies of the 2015 analytical reports are included in Appendix A. Please note the

samples were analyzed by Pace Analytical for the inorganic and general chemistry parameters, similar to the previous year.

Based on two letters from the MPCA, one sent out in mid-2014 and the second in September 2015, "the commissioner must require the lowest reporting limits if necessary and feasible" for the analysis of groundwater samples from solid waste facilities. Consequently, the laboratory's reporting limits are to be at or below the permit's intervention limits. Because Legend Technical is the only Minnesota certified laboratory capable of meeting this requirement, the 2015 groundwater samples were submitted to Legend for analysis of volatile organic compounds (VOCs).

The organic or volatile organic compound (VOC) groundwater quality results for the 2015 sampling event are summarized in Table 4 and Table 5. As shown in both tables, VOC's were not detected in the 2015 samples at or above the reporting limits.

The fall groundwater elevations are listed in Table 6 and the associated groundwater flow map is attached as Figure 2. Figure 2 indicates the groundwater flow direction is consistent with the historical flow direction, which is north to south across the site.

Well stabilization parameters were measured and recorded prior to sample collection. A HydroLab Data Sonde 4A water quality multi-probe and a flow through cell were used to measure the stabilization parameters. The well stabilization forms are attached as Appendix B.

By permit, an annual volume survey is required every other year at the demolition landfill. The annual survey was not required in 2015.

No dissolved metals were detected in the two groundwater samples above their respective intervention limit (IL). Furthermore, as summarized in Table 4 and Table 5 no VOCs were found in the monitoring well samples above the laboratory's reporting limits. Based on the analytical results for 2015 and past analytical results, we do not believe it is necessary to make any changes in 2016 to the landfill's groundwater monitoring network or the analytical schedule as published in the landfill's current permit. In 2016, the analysis schedule specifies sample collection and analyses identical to 2015. Evaluation/inspection reports relative to the 2015 landfill activities are attached as Appendix C.

Please let me know if there is any other information that you might need. My direct telephone number is 218.316.3623 or you can send an email to Greg.Smith@wsn.us.com.

Sincerely,

WIDSETH SMITH NOLTING

Gregory W. Smith

Gregory W. Smith, P.G.

Cc: Mr. Mark Erickson, Facilities Management Office, Minnesota Army National Guard

FIGURES

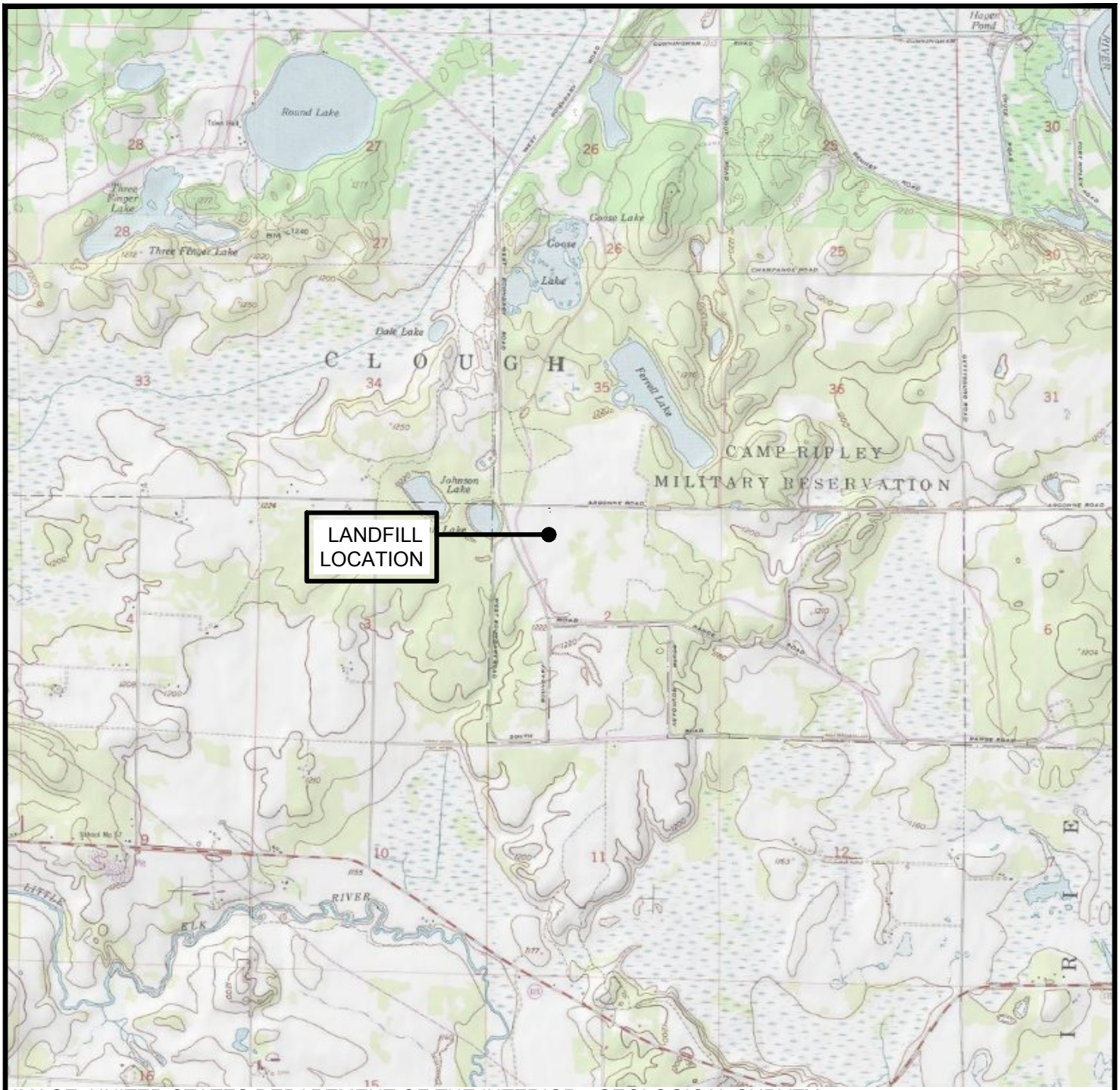
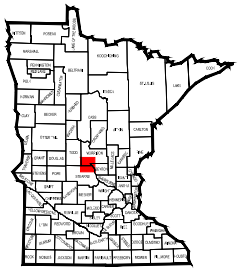


IMAGE: UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY

AREA LOCATION



NORTH

0 1000m 2000m

SCALE (IN METERS)

U.S.G.S. QUADRANGLE MAPS:
BELLE PRAIRIE, BELL PRAIRIE NW, FORT RIPLEY, RANDALL EAST
PUBLISHED: 1956, 1956, 1956, 1956
PHOTOREVISED: 1979, 1979, NA, 1979

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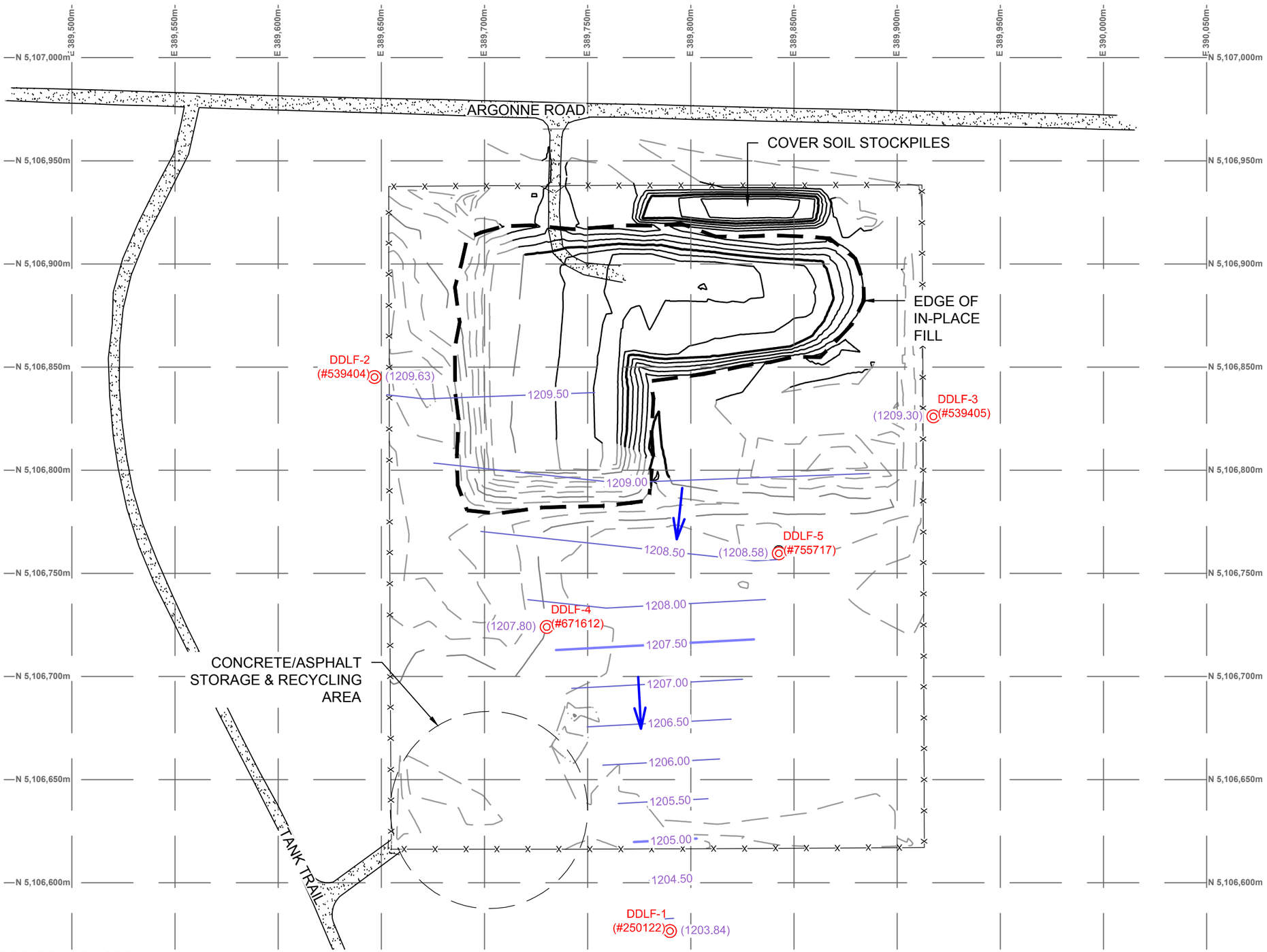
DEMOLITION LANDFILL - 2015 G.W. MONITORING
MN DEPARTMENT OF MILITARY AFFAIRS
LITTLE FALLS, MN

SITE LOCATION MAP

DATE: JANUARY 2016

JOB No. 0283B0009.015

FIGURE 01



LEGEND

- DDFL ◎#539405 — DENOTES MONITORING WELL & UNIQUE WELL NUMBER
- 1208.00 — DENOTES GROUNDWATER SURFACE CONTOUR LINE
- (1207.17) — DENOTES GROUNDWATER ELEVATION AT LOCATION
- DENOTES GROUNDWATER FLOW DIRECTION
- DENOTES FENCE
- DENOTES GRAVEL ROAD SURFACE

0 50m 100m

SCALE (IN METERS)

REFERENCE NOTE:

HORIZONTAL COORDINATES ARE SHOWN IN GRID METERS BASED ON UTM COORDINATES, ZONE 15 NORTH, NAD83 DATUM. VERTICAL CONTOURS AND ELEVATIONS ARE SHOWN IN FEET BASED ON NAVD.

BASE CONTROL POINT COORDINATES AND ELEVATIONS PROVIDED BY MN DEPT. OF MILITARY AFFAIRS.

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NORTH

DEMOLITION LANDFILL - 2015 G.W. MONITORING
MN DEPARTMENT OF MILITARY AFFAIRS
LITTLE FALLS, MN

GROUNDWATER ELEVATIONS ON 11-05-15

DATE: JANUARY 2016

JOB No. 0283B0009.015

FIGURE 02

TABLES

Table 1

Parameters for Analysis

Inorganics
Alkalinity, total as calcium carbonate
Ammonia Nitrogen
Arsenic, dissolved
Barium, dissolved
Boron, dissolved
Cadmium, dissolved
Chloride
Chromium, total dissolved
Copper, dissolved
Iron, dissolved
Lead, dissolved
Manganese, dissolved
Mercury, dissolved
Nitrate+Nitrite as Nitrogen
Sodium, dissolved
Sulfate
Suspended Solids, total
Appearance (field and lab)
Dissolved Oxygen (field)
pH (field and lab)
Specific Conductance (field and lab)
Temperature (field and lab)
Turbidity (field)
Static Water Elevation

468 List
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethane
1,1-Dichloroethylene (Vinylidene chloride)
1,2-Dichloropropane
trans-1,2-Dichloroethylene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Bromomethane; (Ethylene dibromide); EDB
1,2-Dichlorobenzene (orth)
1,2-Dichloroethane
1,2-Dichloroethylene (cis)
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene (meta-)
1,3-Dichloropropane
1,3-Dichloropropane (cis + trans)
1,4-Dichlorobenzene (para)
2,2-Dichloropropane
2-Chlorotoluene (ortho-)
4-Chlorotoluene (para-)
Acetone
Allyl chloride; (3-Chloropropene)
Benzene
Bromobenzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dichlorobromomethane)
Bromoform
Bromomethane (Methyl chloride)
Carbon tetrachloride
Chlorobenzene (monochlorobenzene)
Chlorodibromomethane; (Dibromochloromethane)
Chloroethane
Chloroform
Chloromethane; (Methyl chloride)
Cumene; (Isopropylbenzene)
Dibromochloropropane; (DBCP)
Dibromomethane; Methylene bromide)

Dichlorodifluoromethane
Dichlorofluoromethane
Dichloromethane (methylene chloride)
Ethyl benzene
Ethyl ether
Hexachlorobutadiene
Methyl ethyl ketone (MEK)
Methyl isobutyl ketone; (4-Methyl-2-pentanone)
Methyl tertiary-butyl ether (MTBE)
Naphthalene
n-Butyl benzene
n-Propyl benzene
p-Isopropyltoluene
sec-Butyl benzene
Styrene
tert-Butyl benzene
Tetrachloroethylene; (Perchloroethylene)
Tetrahydrofuran
Toluene
Trichloroethylene; (TCE)
Trichlorofluoromethane
Vinyl Chloride
Xylenes (mixture of o, m, p)

Table 2

Summary of Inorganic Groundwater Quality Data - DDLF-4
Camp Ripley Demolition Debris Landfill
State of Minnesota Department of Military Affairs

Parameter	Units	IL	DDLF-4 11/5/2008*	DDLF-4 11/11/2009*	DDLF-4 11/8/2010*	DDLF-4 11/8/2011*	DDLF-4 11/1/2012*	DDLF-4 10/25/2013	DDLF-4 11/12/2014	DDLF-4 11/5/2015
Alkalinity	mg/L	--	51	72	62	64	76.1	72.4	<100	55.4
Ammonia Nitrogen	mg/L	--	<0.01	<0.01	<0.01	<0.1	<0.1	0.1	<0.1	<0.1
Arsenic (dissolved)	ug/L	2.5	<1.0	<1.0	<1.6	<1.6	<0.5	<20	<2.0	<2.0
Barium (dissolved)	mg/L	0.5	0.006	0.008	NA	NA	0.012	0.01	<0.01	<0.01
Boron (dissolved)	ug/L	250	<40	<40	NA	NA	NA	<150	<100	<100
Cadmium (dissolved)	ug/L	1	1	<0.2	0.2	NA	NA	<3.0	<0.8	<0.8
Calcium (dissolved)	mg/L	--	14	20	NA	NA	22.4	NA	NA	NA
Cation/Anion Balance	%	--	NA	NA	NA	NA	2.1	NA	NA	NA
Chloride	mg/L	--	1	1.1	NA	NA	<0.5	<2.0	NA	<1.0
Chromium (dissolved)	ug/L	25	<5	7.9	NA	NA	5	<10	<5	<10
Chromium, Trivalent	ug/L	--	NA	NA	NA	NA	<10	NA	NA	NA
Chromium, Hexavalent	ug/L	--	<3	<3	NA	NA	<10	NA	NA	NA
Conductance (Field)	umhos/cm	--	NA	NA	NA	NA	96.3	149	110	113
Conductance (Lab)	umhos/cm	--	120	150	130	120	160	160	129	122
Copper (dissolved)	ug/L	250	<10	10	NA	NA	<5	<10	<5	<10
Dissolved Oxygen (Field)	mg/L	--	NA	NA	NA	NA	8.72	NA	10.13	9.35
Eh (Lab)	mV	--	130	140	140	440	202	NA	NA	NA
Eh (Field)	mV	--	NA	NA	NA	NA	502.7	NA	284	203
Iron (dissolved)	mg/L	--	<0.01	0.1	0.14	<0.01	0.099	0.217	<0.05	<0.05
Lead (dissolved)	ug/L	1.25	<0.4	0.4	<0.4	<0.4	<0.5	<10	<2	<2
Magnesium (dissolved)	mg/L	--	4	5.6	4.5	4.6	6.1	NA	NA	NA
Manganese (dissolved)	mg/L	0.025	0.059	0.01	NA	NA	<0.01	<0.005	<0.01	<0.01
Mercury (dissolved)	ug/L	0.5	<0.1	0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2
Nitrate + Nitrite as N	mg/L	2.5	0.8	1.1	NA	NA	NA	0.45	0.43	0.78
Nitrate as N	mg/L	--	NA	NA	0.68	0.56	0.37	0.45	NA	NA
Nitrite as N	mg/L	--	NA	NA	<0.05	<0.05	<0.1	<0.1	NA	NA
pH (Field)	Standard Units	--	NA	NA	NA	NA	7.9	8.2	6.6	7.05
pH (Lab)	Standard Units	--	6.9	7.6	7	7.3	7	6.6	7	6.9
Potassium (dissolved)	mg/L	--	6	0.4	0.6	<0.3	0.57	NA	NA	NA
Sodium (dissolved)	mg/L	--	2.1	2.3	2.4	2.4	NA	2.6	2.1	2.3
Sulfate	mg/L	--	6.2	6.3	3.1	1.9	2.1	3.4	2.5	4.1
Temp (Field)	Degrees C	--	NA	NA	NA	NA	8.8	8.8	8.6	8.8
Total Dissolved Solids (TDS)	mg/L	--	88	100	98	92	120	NA	NA	NA
Total Suspended Solids (TSS)	mg/L	--	4	150	12	14	98.7	12.8	27.6	54.7
Turbidity (Field)	NTU	--	5	53	12	16	38	56	25	38.4
Zinc (dissolved)	ug/L	500	<5	<5	NA	NA	<10	NA	NA	NA

NA = Not Analyzed
*Data obtained from previous reports
mg/L = Milligrams per liter = parts per million
ug/L = Micrograms per liter = parts per billion
IL = Intervention limit

Table 3

Summary of Inorganic Groundwater Quality Data - DDLF-5
Camp Ripley Demolition Debris Landfill
State of Minnesota Department of Military Affairs

Parameter	Units	IL	DDLF-5 11/5/2008*	DDLF-5 11/11/2009*	DDLF-5 11/8/2010*	DDLF-5 11/8/2011*	DDLF-5 11/1/2012*	DDLF-5 10/25/2013	DDLF-5 11/12/2014	DDLF-5 11/5/2015
Alkalinity	mg/L	--	34	48	45	37	38.7	29.5	26.7	31.1
Ammonia Nitrogen	mg/L	--	<0.01	<0.01	<0.01	<0.1	<0.1	0.061	<0.1	<0.1
Arsenic (dissolved)	ug/L	2.5	<1	<1	<1.6	<1.6	0.85	<20	<2	<2
Barium (dissolved)	mg/L	0.5	0.01	0.006	NA	NA	0.0437	0.01	<0.01	<0.01
Boron (dissolved)	ug/L	250	<40	<40	NA	NA	NA	<150	<100	<100
Cadmium (dissolved)	ug/L	1	<0.2	<0.2	NA	NA	<0.2	<3.0	<0.8	<0.8
Calcium (dissolved)	mg/L	--	8.8	10	NA	NA	17.7	NA	NA	NA
Cation/Anion Balance	%	--	NA	NA	NA	NA	25.1	NA	NA	NA
Chloride	mg/L	--	1.1	0.73	NA	NA	<0.5	<2.0	<1.0	<1.0
Chromium (dissolved)	ug/L	25	<5	8.7	NA	NA	<5	<10	<5	<10
Chromium, Trivalent	ug/L	--	NA	NA	NA	NA	<10	NA	NA	NA
Chromium, Hexavalent	ug/L	--	<3	<3	NA	NA	<10	NA	NA	NA
Conductance (Field)	umhos/cm	--	NA	NA	NA	NA	150.3	60	57	59
Conductance (Lab)	umhos/cm	--	77	97	93	74	110	66.4	60	70
Copper (dissolved)	ug/L	250	<10	<10	NA	NA	7.1	<10	<5	<10
Dissolved Oxygen (Field)	mg/L	--	NA	NA	NA	NA	8.83	NA	10.01	8.56
Eh (Lab)	mV	--	140	140	140	430	173	NA	NA	NA
Eh (Field)	mV	--	NA	NA	NA	NA	524	NA	390	282
Iron (dissolved)	mg/L	--	<0.01	<10	0.033	<0.01	5.03	<0.05	0.052	<0.05
Lead (dissolved)	ug/L	1.25	<0.4	<0.4	<0.4	0.4	2.2	<10	<2	<2
Magnesium (dissolved)	mg/L	--	2.3	3	3.1	2.5	4.6	NA	NA	NA
Manganese (dissolved)	mg/L	0.025	0.076	<0.005	NA	NA	0.193	<0.005	<0.01	<0.01
Mercury (dissolved)	ug/L	0.5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2
Nitrate + Nitrite as N	mg/L	2.5	0.6	1.2	NA	NA	NA	0.13	0.11	0.29
Nitrate as N	mg/L	--	NA	NA	0.59	<0.05	1.6	0.13	NA	NA
Nitrite as N	mg/L	--	NA	NA	<0.05	<0.05	<0.1	<0.1	NA	NA
pH (Field)	Standard Units	--	NA	NA	NA	NA	7.64	7.79	6.11	6.34
pH (Lab)	Standard Units	--	6.6	7	6.7	7.3	6.7	6.3	6.5	6.3
Potassium (dissolved)	mg/L	--	0.6	0.4	0.55	0.43	1.3	NA	NA	NA
Sodium (dissolved)	mg/L	--	2	2.1	2.2	1.9	NA	1.86	1.8	2
Sulfate	mg/L	--	2.8	2.2	2.7	1.5	3.8	<2.5	<2.0	<2.0
Temp (Field)	Degrees C	--	NA	NA	NA	NA	8.83	8.4	8.5	8.6
Total Dissolved Solids (TDS)	mg/L	--	64	80	88	72	93	NA	NA	NA
Total Suspended Solids (TSS)	mg/L	--	<2	320	32	290	904	38.4	68.8	715
Turbidity (Field)	NTU	--	3.6	70	19	110	70	76	65.3	39.9
Zinc (dissolved)	ug/L	500	<5	<5	NA	NA	76.8	NA	NA	NA

NA = Not Analyzed
*Data obtained from previous reports
mg/L = Milligrams per liter = parts per million
ug/L = Micrograms per liter = parts per billion
IL = Intervention limit

Table 4

Summary of Organic Groundwater Quality Data - DDLF-4
Camp Ripley Demolition Debris Landfill
State of Minnesota Department of Military Affairs

Parameter	Units	IL	DDLF-4 11/5/2008*	DDLF-4 11/11/2009*	DDLF-4 11/8/2010*	DDLF-4 11/8/2011*	DDLF-4 11/1/2012*	DDLF-4 10/25/2013	DDLF-4 11/12/2014	DDLF-4 11/5/2015
Acetone	ug/L	175	<4.0	<4.0	<4.0	<4.0	<25.0	<20.0	<20.0	<20.0
Allylchloride	ug/L	7.5	<0.042	<0.042	<0.16	<0.16	<4.0	<4.0	<4.0	<5.0
Benzene	ug/L	0.5	<0.069	<0.069	<0.2	<0.2	<1.0	<1.0	<1.0	<0.50
Bromobenzene	ug/L	--	<0.17	<0.17	<0.12	<0.12	<1.0	<1.0	<1.0	<1.0
Bromochloromethane	ug/L	--	<0.082	<0.082	<0.18	<0.18	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	ug/L	1.5	<0.086	<0.086	<0.12	<0.12	<1.0	<1.0	<1.0	<1.0
Bromoform	ug/L	10	<0.16	<0.16	<0.13	<0.13	<4.0	<4.0	<4.0	<5.0
Bromomethane	ug/L	2.5	<0.06	<0.06	<0.16	<0.16	<4.0	<4.0	<4.0	<2.5
Methyl Ethyl Ketone (MEK)/2-Butanone	ug/L	1000	<0.1	<0.1	<0.18	<0.18	<4.0	<5.0	<5.0	<20.0
n-Butylbenzene	ug/L	--	<0.087	<0.087	<0.17	<0.17	<1.0	<1.0	<1.0	<2.5
sec-Butylbenzene	ug/L	--	<0.15	<0.15	<0.16	<0.16	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	ug/L	--	<0.074	<0.074	<0.28	<0.28	<1.0	<1.0	<1.0	<1.0
Carbon tetrachloride	ug/L	0.75	<0.14	<0.14	<0.2	<0.2	<1.0	<1.0	<1.0	<0.50
Chlorobenzene	ug/L	25	<0.089	<0.089	<0.24	<0.24	<1.0	<1.0	<1.0	<1.0
Chloroethane	ug/L	--	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<2.5
Chloroform	ug/L	7.5	<0.068	<0.068	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
Chloromethane	ug/L	--	<0.08	<0.08	<0.13	<0.13	<4.0	<4.0	<4.0	<2.5
2-Chlorotoluene	ug/L	--	<0.11	<0.11	<0.13	<0.13	<1.0	<1.0	<1.0	<1.0
4-Chlorotoluene	ug/L	--	<0.12	<0.12	<0.23	<0.23	<1.0	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	ug/L	0.05	<0.12	<0.12	<0.13	<0.13	<4.0	<4.0	<4.0	<5.0
Dibromochloromethane	ug/L	2.5	<0.12	<0.12	<0.11	<0.11	<1.0	<1.0	<1.0	<0.50
1,2-Dibromoethane (EDB)	ug/L	0.001	<0.15	<0.15	<0.1	<0.1	<1.0	<1.0	<1.0	<0.50
Dibromomethane	ug/L	--	<0.081	<0.081	<0.21	<0.21	<4.0	<4.0	<4.0	<2.5
1,2-Dichlorobenzene	ug/L	150	<0.1	<0.1	<0.096	<0.096	<1.0	<1.0	<1.0	<0.50
1,3-Dichlorobenzene	ug/L	150	<0.13	<0.13	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	2.5	<0.1	<0.1	<0.084	<0.084	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	ug/L	175	<0.084	<0.084	<0.23	<0.23	<1.0	<1.0	<1.0	<5.0
1,1-Dichloroethane	ug/L	25	<0.077	<0.077	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	ug/L	1	<0.1	<0.1	<0.17	<0.17	<1.0	<1.0	<1.0	<0.25
1,1-Dichloroethene	ug/L	50	<0.12	<0.12	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	12.5	<0.081	<0.081	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	25	<0.053	<0.053	<0.23	<0.23	<1.0	<1.0	<1.0	<1.0
Dichlorofluoromethane	ug/L	--	<0.097	<0.097	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	ug/L	1.25	<0.055	<0.055	<0.19	<0.19	<4.0	<4.0	<4.0	<1.0
1,3-Dichloropropane	ug/L	--	<0.091	<0.091	<0.14	<0.14	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	ug/L	--	<0.063	<0.063	<0.36	<0.36	<4.0	<4.0	<4.0	<5.0
1,1-Dichloropropene	ug/L	--	<0.089	<0.089	<0.21	<0.21	<1.0	<1.0	<1.0	<1.0

NA = Not Analyzed
*Data obtained from previous reports
mg/L = Milligrams per liter = parts per million
ug/L = Micrograms per liter = parts pre billion
IL = Intervention limit

Table 4 (con't)

Summary of Organic Groundwater Quality Data - DDLF-4
Camp Ripley Demolition Debris Landfill
State of Minnesota Department of Military Affairs

Parameter	Units	IL	DDLF-4 11/5/2008*	DDLF-4 11/11/2009*	DDLF-4 11/8/2010*	DDLF-4 11/8/2011*	DDLF-4 11/1/2012*	DDLF-4 10/25/2013	DDLF-4 11/12/2014	DDLF-4 11/5/2015
cis-1,3-Dichloropopene	ug/L	0.5	<0.098	<0.098	<0.16	<0.16	<4.0	<4.0	<4.0	<0.50
trans-1,3-Dichloropropene	ug/L	0.5	<0.041	<0.041	<0.14	<0.14	<4.0	<4.0	<4.0	<0.50
Diethyl Ether (Ethyl Ether)	ug/L	50	<0.079	<0.079	<0.15	<0.15	<4.0	<4.0	<4.0	<5.0
Ethylbenzene	ug/L	12.5	<0.12	<0.12	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	ug/L	0.25	<0.096	<0.096	<0.2	<0.2	<5.0	<1.0	<1.0	<2.5
Isopropylbenzene (Cumene)	ug/L	75	<0.055	<0.055	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	ug/L	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Methylene Chloride	ug/L	1.25	<0.13	<0.13	<0.18	<0.18	<4.0	<4.0	<4.0	<2.5
Methyl isobutyl ketone	ug/L	75	<0.044	<0.044	<0.13	<0.13	<4.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	ug/L	--	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
Naphthalene	ug/L	75	<0.13	<0.13	<0.2	<0.2	<4.0	<4.0	<4.0	<5.0
n-Propylbenzene	ug/L	--	<0.13	<0.13	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
Styrene	ug/L	25	<0.079	<0.079	<0.15	<0.15	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	ug/L	17.5	<0.099	<0.099	<0.13	<0.13	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.094	<0.094	<0.1	<0.1	<1.0	<1.0	<1.0	<0.50
Tetrachloroethene	ug/L	1.25	<0.12	<0.12	<0.29	<0.29	<1.0	<1.0	<1.0	<1.0
Tetrahydrofuran	ug/L	25	<1.0	<1.0	<1.0	<1.0	<10.0	<10.0	<10.0	<20.0
Toluene	ug/L	50	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	ug/L	--	<0.12	<0.12	<0.12	<0.12	<1.0	<1.0	<1.0	<5.0
1,2,4-Trichlorobenzene	ug/L	25	<0.073	<0.073	<0.15	<0.15	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	150	<0.076	<0.076	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	0.75	<0.11	<0.11	<0.11	<0.11	<1.0	<1.0	<1.0	<0.50
Trichloroethene	ug/L	1.25	<0.16	<0.16	<0.19	<0.19	<1.0	<0.4	<0.4	<0.50
Trichlorofluoromethane	ug/L	500	<0.095	<0.095	<0.19	<0.19	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichloropropane	ug/L	10	<0.092	<0.092	<0.17	<0.17	<4.0	<4.0	<4.0	<0.20
1,1,2-Trichlorotrifluoroethane	ug/L	50,000	<0.074	<0.074	<0.27	<0.27	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	ug/L	25	<0.042	<0.042	<0.18	<0.18	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	ug/L	25	<0.1	<0.1	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	ug/L	0.05	<0.1	<0.1	<0.2	<0.2	<0.40	<0.4	<0.40	<0.050
m,p&o-Xylene (Xylene Total)	ug/L	75	<0.2	<0.2	<0.32	<0.32	<3.0	<3.0	<3.0	NA
m&p-Xylene	ug/L	--	NA	NA	NA	NA	<2.0	<2.0	NA	<2.0
o-Xylene	ug/L	--	NA	NA	NA	NA	<1.0	<1.0	NA	<1.0

NA = Not Analyzed
*Data obtained from previous reports
mg/L = Milligrams per liter = parts per million
ug/L = Micrograms per liter = parts per billion
IL = Intervention limit

Table 5

Summary of Organic Groundwater Quality Data - DDLF-5
Camp Ripley Demolition Debris Landfill
State of Minnesota Department of Military Affairs

Parameter	Units	IL	DDLF-5 11/5/2008*	DDLF-5 11/11/2009*	DDLF-5 11/8/2010*	DDLF-5 11/8/2011*	DDLF-5 11/1/2012*	DDLF-5 10/25/2013	DDLF-5 11/12/2014	DDLF-5 11/5/2015
Acetone	ug/L	175	<4.0	<4.0	<4.0	<4.0	<25.0	<20.0	<20.0	<20.0
Allylchloride	ug/L	7.5	<0.042	<0.042	<0.16	<0.16	<4.0	<4.0	<4.0	<5.0
Benzene	ug/L	0.5	<0.069	<0.069	<0.2	<0.2	<1.0	<1.0	<1.0	<0.50
Bromobenzene	ug/L	--	<0.17	<0.17	<0.12	<0.12	<1.0	<1.0	<1.0	<1.0
Bromochloromethane	ug/L	--	<0.082	<0.082	<0.18	<0.18	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	ug/L	1.5	<0.086	<0.086	<0.12	<0.12	<1.0	<1.0	<1.0	<1.0
Bromoform	ug/L	10	<0.16	<0.16	<0.13	<0.13	<4.0	<4.0	<4.0	<5.0
Bromomethane	ug/L	2.5	<0.06	<0.06	<0.16	<0.16	<4.0	<4.0	<4.0	<2.5
Methyl Ethyl Ketone (MEK)/2-Butanone	ug/L	1000	<0.1	<0.1	<0.18	<0.18	<4.0	<5.0	<5.0	<20.0
n-Butylbenzene	ug/L	--	<0.087	<0.087	<0.17	<0.17	<1.0	<1.0	<1.0	<2.5
sec-Butylbenzene	ug/L	--	<0.15	<0.15	<0.16	<0.16	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	ug/L	--	<0.074	<0.074	<0.28	<0.28	<1.0	<1.0	<1.0	<1.0
Carbon tetrachloride	ug/L	0.75	<0.14	<0.14	<0.2	<0.2	<1.0	<1.0	<1.0	<0.50
Chlorobenzene	ug/L	25	<0.089	<0.089	<0.24	<0.24	<1.0	<1.0	<1.0	<1.0
Chloroethane	ug/L	--	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<2.5
Chloroform	ug/L	7.5	<0.068	<0.068	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
Chloromethane	ug/L	--	<0.08	<0.08	<0.13	<0.13	<4.0	<4.0	<4.0	<2.5
2-Chlorotoluene	ug/L	--	<0.11	<0.11	<0.13	<0.13	<1.0	<1.0	<1.0	<1.0
4-Chlorotoluene	ug/L	--	<0.12	<0.12	<0.23	<0.23	<1.0	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	ug/L	0.05	<0.12	<0.12	<0.13	<0.13	<4.0	<4.0	<4.0	<5.0
Dibromochloromethane	ug/L	2.5	<0.12	<0.12	<0.11	<0.11	<1.0	<1.0	<1.0	<0.50
1,2-Dibromoethane (EDB)	ug/L	0.001	<0.15	<0.15	<0.1	<0.1	<1.0	<1.0	<1.0	<0.50
Dibromomethane	ug/L	--	<0.081	<0.081	<0.21	<0.21	<4.0	<4.0	<4.0	<2.5
1,2-Dichlorobenzene	ug/L	150	<0.1	<0.1	<0.096	<0.096	<1.0	<1.0	<1.0	<0.50
1,3-Dichlorobenzene	ug/L	150	<0.13	<0.13	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	2.5	<0.1	<0.1	<0.084	<0.084	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	ug/L	175	<0.084	<0.084	<0.23	<0.23	<1.0	<1.0	<1.0	<5.0
1,1-Dichloroethane	ug/L	25	<0.077	<0.077	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	ug/L	1	<0.1	<0.1	<0.17	<0.17	<1.0	<1.0	<1.0	<0.25
1,1-Dichloroethene	ug/L	50	<0.12	<0.12	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	12.5	<0.081	<0.081	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	25	<0.053	<0.053	<0.23	<0.23	<1.0	<1.0	<1.0	<1.0
Dichlorofluoromethane	ug/L	--	<0.097	<0.097	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	ug/L	1.25	<0.055	<0.055	<0.19	<0.19	<4.0	<4.0	<4.0	<1.0
1,3-Dichloropropane	ug/L	--	<0.091	<0.091	<0.14	<0.14	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	ug/L	--	<0.063	<0.063	<0.36	<0.36	<4.0	<4.0	<4.0	<5.0
1,1-Dichloropropene	ug/L	--	<0.089	<0.089	<0.21	<0.21	<1.0	<1.0	<1.0	<1.0

NA = Not Analyzed
*Data obtained from previous reports
mg/L = Milligrams per liter = parts per million
ug/L = Micrograms per liter = parts pre billion
IL = Intervention limit

Table 5 (con't)

Summary of Organic Groundwater Quality Data - DDLF-5
Camp Ripley Demolition Debris Landfill
State of Minnesota Department of Military Affairs

Parameter	Units	IL	DDLF-5 11/5/2008*	DDLF-5 11/11/2009*	DDLF-5 11/8/2010*	DDLF-5 11/8/2011*	DDLF-5 11/1/2012*	DDLF-4 10/25/2013	DDLF-5 11/12/2014	DDLF-5 11/5/2015
cis-1,3-Dichloropopene	ug/L	0.5	<0.098	<0.098	<0.16	<0.16	<4.0	<4.0	<4.0	<0.50
trans-1,3-Dichloropropene	ug/L	0.5	<0.041	<0.041	<0.14	<0.14	<4.0	<4.0	<4.0	<0.50
Diethyl Ether (Ethyl Ether)	ug/L	50	<0.079	<0.079	<0.15	<0.15	<4.0	<4.0	<4.0	<5.0
Ethylbenzene	ug/L	12.5	<0.12	<0.12	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	ug/L	0.25	<0.096	<0.096	<0.2	<0.2	<5.0	<1.0	<1.0	<2.5
Isopropylbenzene (Cumene)	ug/L	75	<0.055	<0.055	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	ug/L	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Methylene Chloride	ug/L	1.25	<0.13	<0.13	<0.18	<0.18	<4.0	<4.0	<4.0	<2.5
Methyl isobutyl ketone	ug/L	75	<0.044	<0.044	<0.13	<0.13	<4.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	ug/L	--	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
Naphthalene	ug/L	75	<0.13	<0.13	<0.2	<0.2	<4.0	<4.0	<4.0	<5.0
n-Propylbenzene	ug/L	--	<0.13	<0.13	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
Styrene	ug/L	25	<0.079	<0.079	<0.15	<0.15	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	ug/L	17.5	<0.099	<0.099	<0.13	<0.13	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.094	<0.094	<0.1	<0.1	<1.0	<1.0	<1.0	<0.50
Tetrachloroethene	ug/L	1.25	<0.12	<0.12	<0.29	<0.29	<1.0	<1.0	<1.0	<1.0
Tetrahydrofuran	ug/L	25	<1.0	<1.0	<1.0	<1.0	<10.0	<10.0	<10.0	<20.0
Toluene	ug/L	50	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	ug/L	--	<0.12	<0.12	<0.12	<0.12	<1.0	<1.0	<1.0	<5.0
1,2,4-Trichlorobenzene	ug/L	25	<0.073	<0.073	<0.15	<0.15	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	150	<0.076	<0.076	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	0.75	<0.11	<0.11	<0.11	<0.11	<1.0	<1.0	<1.0	<0.50
Trichloroethene	ug/L	1.25	<0.16	<0.16	<0.19	<0.19	<1.0	<0.4	<0.4	<0.50
Trichlorofluoromethane	ug/L	500	<0.095	<0.095	<0.19	<0.19	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichloropropane	ug/L	10	<0.092	<0.092	<0.17	<0.17	<4.0	<4.0	<4.0	<0.20
1,1,2-Trichlorotrifluoroethane	ug/L	50,000	<0.074	<0.074	<0.27	<0.27	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	ug/L	25	<0.042	<0.042	<0.18	<0.18	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	ug/L	25	<0.1	<0.1	<0.17	<0.17	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	ug/L	0.05	<0.1	<0.1	<0.2	<0.2	<0.40	<0.4	<0.4	<0.050
m,p&o-Xylene (Xylene Total)	ug/L	75	<0.2	<0.2	<0.32	<0.32	<3.0	<3.0	<3.0	NA
m&p-Xylene	ug/L	--	NA	NA	NA	NA	<2.0	<2.0	NA	<2.0
o-Xylene	ug/L	--	NA	NA	NA	NA	<1.0	<1.0	NA	<1.0

NA = Not Analyzed
*Data obtained from previous reports
mg/L = Milligrams per liter = parts per million
ug/L = Micrograms per liter = parts per billion
IL = Intervention limit

Table 6

Groundwater Elevation
Camp Ripley Demolition Debris Landfill
State of Minnesota Department of Military Affairs

	DDLF-1	DDLF-2	DDLF-3	DDLF-4	DDLF-5
Unique Well Number	250122	539404	539405	671612	755717
Top of Casing Elevation (ft MSL)*	1233.65	1228.26	1236	1231.95	1235.85
Top of Casing Elevation (ft MSL)**	1232.98	1229.64	1236.71	1232.38	1236.02
Screened Interval (ft MSL)*	1206.45-1196.45	1212.26-1197.26	1214.95-1197.95	1206.95-1196.95	1208.55-1193.55
Date	**DDLF-1**	**DDLF-2**	**DDLF-3**	**DDLF-4**	**DDLF-5**
11/5/2008*	1202.28	1206.11	1206.49	1205.19	1206.65
11/11/2009*	1202.13	1206.12	1206.49	1204.96	1206.11
11/8/2010*	1201.8	1207.88	1207.21	1205.93	1206.63
11/8/2011	1203.38	1209.2	1209.02	1207.29	1208.22
11/1/2012	1201.23	1207.09	1206.69	1204.88	1205.92
10/25/2013	1203.12	1209.01	1207.99	1207.17	1208.01
11/12/2014	1203.00	1210.61	1210.37	1208.82	1209.66
11/5/2015	1203.84	1209.63	1209.30	1207.80	1208.58

*According to survey prior to 2011
** According to 2011 survey

APPENDIX A

ANALYTICAL REPORTS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

November 23, 2015

Greg Smith
Widseth, Smith & Nolting
7804 Industrial Park Road
PO Box 2720
Baxter, MN 56425

RE: Project: Camp Ripley DDLF
Pace Project No.: 1256796

Dear Greg Smith:
Enclosed are the analytical results for sample(s) received by the laboratory on November 06, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

CERTIFICATIONS

Project: Camp Ripley DDLF
Pace Project No.: 1256796

Virginia Minnesota Certification ID's
315 Chestnut Street, Virginia, MN 55792
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842015-1
Oklahoma Department of Environmental Quality

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SAMPLE SUMMARY

Project: Camp Ripley DDLF
Pace Project No.: 1256796

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1256796001	**DDLF-4**	Water	11/05/15 12:24	11/06/15 11:00
1256796002	**DDLF-5**	Water	11/05/15 13:15	11/06/15 11:00

Pace Analytical Services, Inc.
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SAMPLE ANALYTE COUNT

Project: Camp Ripley DDLF
Pace Project No.: 1256796

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1256796001	**DDLF-4**	EPA 200.7	MAR	7	PASI-V
		EPA 200.8	KRV	3	PASI-V
		EPA 7470	MAR	1	PASI-V
		SM 2320B	CSD	1	PASI-V
		SM 2510B	JP1	1	PASI-V
		SM 4500-H+B	JP1	1	PASI-V
		USGS I-3765	BEM	1	PASI-V
		EPA 300.0	CSD	2	PASI-V
		EPA 350.1	JJH	1	PASI-V
		EPA 353.2	JJH	1	PASI-V
1256796002	**DDLF-5**	EPA 200.7	MAR	7	PASI-V
		EPA 200.8	KRV	3	PASI-V
		EPA 7470	MAR	1	PASI-V
		SM 2320B	CSD	1	PASI-V
		SM 2510B	JP1	1	PASI-V
		SM 4500-H+B	JP1	1	PASI-V
		USGS I-3765	BEM	1	PASI-V
		EPA 300.0	CSD	2	PASI-V
		EPA 350.1	JJH	1	PASI-V
		EPA 353.2	JJH	1	PASI-V

Pace Analytical Services, Inc.
315 Chestnut Street
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ANALYTICAL RESULTS

Project: Camp Ripley DDLF
Pace Project No.: 1256796

Sample: DDLF-4 **Lab ID: 1256796001** Collected: 11/05/15 12:24 Received: 11/06/15 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Dissolved	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Barium, Dissolved	ND	ug/L	10.0	1	11/09/15 15:04	11/10/15 13:10	7440-39-3	
Boron, Dissolved	ND	ug/L	100	1	11/09/15 15:04	11/10/15 13:10	7440-42-8	
Chromium, Dissolved	ND	ug/L	10.0	1	11/09/15 15:04	11/10/15 13:10	7440-47-3	
Copper, Dissolved	ND	ug/L	10.0	1	11/09/15 15:04	11/10/15 13:10	7440-50-8	
Iron, Dissolved	ND	ug/L	50.0	1	11/09/15 15:04	11/10/15 13:10	7439-89-6	
Manganese, Dissolved	ND	ug/L	10.0	1	11/09/15 15:04	11/10/15 13:10	7439-96-5	
Sodium, Dissolved	**2.3**	mg/L	0.50	1	11/09/15 15:04	11/10/15 13:10	7440-23-5	
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic, Dissolved	ND	ug/L	2.0	4	11/09/15 15:04	11/10/15 15:14	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.80	4	11/09/15 15:04	11/10/15 15:14	7440-43-9	
Lead, Dissolved	ND	ug/L	2.0	4	11/09/15 15:04	11/10/15 15:14	7439-92-1	
7470 Mercury, Dissolved	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	11/11/15 11:39	11/12/15 12:14	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**55.4**	mg/L	5.0	1		11/13/15 12:57		
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	**122**	umhos/cm	10.0	1		11/16/15 10:53		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**6.9**	Std. Units	0.10	1		11/06/15 14:49		H6
USGS I-3765 TSS	Analytical Method: USGS I-3765							
Total Suspended Solids	**54.7**	mg/L	1.7	1		11/12/15 09:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	ND	mg/L	1.0	1		11/18/15 08:31	16887-00-6	
Sulfate	**4.1**	mg/L	2.0	1		11/18/15 08:31	14808-79-8	
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	ND	mg/L	0.10	1	11/17/15 10:12	11/18/15 10:59	7664-41-7	
353.2 Nitrate + Nitrite pres.	Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	**0.78**	mg/L	0.10	1		11/13/15 13:42		

Sample: DDLF-5 **Lab ID: 1256796002** Collected: 11/05/15 13:15 Received: 11/06/15 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Dissolved	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Barium, Dissolved	ND	ug/L	10.0	1	11/09/15 15:04	11/10/15 13:13	7440-39-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

ANALYTICAL RESULTS

Project: Camp Ripley DDLF
Pace Project No.: 1256796

Sample: DDLF-5 **Lab ID: 1256796002** Collected: 11/05/15 13:15 Received: 11/06/15 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Dissolved	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Boron, Dissolved	ND	ug/L	100	1	11/09/15 15:04	11/10/15 13:13	7440-42-8	
Chromium, Dissolved	ND	ug/L	10.0	1	11/09/15 15:04	11/10/15 13:13	7440-47-3	
Copper, Dissolved	ND	ug/L	10.0	1	11/09/15 15:04	11/10/15 13:13	7440-50-8	
Iron, Dissolved	ND	ug/L	50.0	1	11/09/15 15:04	11/10/15 13:13	7439-89-6	
Manganese, Dissolved	ND	ug/L	10.0	1	11/09/15 15:04	11/10/15 13:13	7439-96-5	
Sodium, Dissolved	**2.0**	mg/L	0.50	1	11/09/15 15:04	11/10/15 13:13	7440-23-5	
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic, Dissolved	ND	ug/L	2.0	4	11/09/15 15:04	11/10/15 15:20	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.80	4	11/09/15 15:04	11/10/15 15:20	7440-43-9	
Lead, Dissolved	ND	ug/L	2.0	4	11/09/15 15:04	11/10/15 15:20	7439-92-1	
7470 Mercury, Dissolved	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	11/11/15 11:39	11/12/15 12:20	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**31.1**	mg/L	5.0	1		11/13/15 13:03		
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	**70**	umhos/cm	10.0	1		11/16/15 10:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**6.3**	Std. Units	0.10	1		11/06/15 14:52		H6
USGS I-3765 TSS	Analytical Method: USGS I-3765							
Total Suspended Solids	**715**	mg/L	1.7	1		11/12/15 09:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	ND	mg/L	1.0	1		11/18/15 08:54	16887-00-6	
Sulfate	ND	mg/L	2.0	1		11/18/15 08:54	14808-79-8	
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	ND	mg/L	0.10	1	11/17/15 10:12	11/18/15 10:57	7664-41-7	
353.2 Nitrate + Nitrite pres.	Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	**0.29**	mg/L	0.10	1		11/13/15 13:41		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
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QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: MERP/1789
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 267195
Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	11/12/15 12:09	

LABORATORY CONTROL SAMPLE: 267196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	2	2.0	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 267197 267198

Parameter	Units	1256796001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	2	2	2.0	2.0	99	100	75-125	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 267200 267201

Parameter	Units	1256740011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.20	2	2	2.0	2.0	98	100	75-125	3	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
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QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: MPRP/6142
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 MET Dissolved
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 266622 Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium, Dissolved	ug/L	ND	10.0	11/10/15 11:47	
Boron, Dissolved	ug/L	ND	100	11/10/15 11:47	
Chromium, Dissolved	ug/L	ND	10.0	11/10/15 11:47	
Copper, Dissolved	ug/L	ND	10.0	11/10/15 11:47	
Iron, Dissolved	ug/L	ND	50.0	11/10/15 11:47	
Manganese, Dissolved	ug/L	ND	10.0	11/10/15 11:47	
Sodium, Dissolved	mg/L	ND	0.50	11/10/15 11:47	

LABORATORY CONTROL SAMPLE: 266623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium, Dissolved	ug/L	500	508	102	85-115	
Boron, Dissolved	ug/L	500	504	101	85-115	
Chromium, Dissolved	ug/L	500	527	105	85-115	
Copper, Dissolved	ug/L	500	506	101	85-115	
Iron, Dissolved	ug/L	10000	10400	104	85-115	
Manganese, Dissolved	ug/L	1000	1020	102	85-115	
Sodium, Dissolved	mg/L	20	20.4	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 266624 266625

Parameter	Units	1256611001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium, Dissolved	ug/L	49.6	500	500	556	552	101	100	70-130	1	20	
Boron, Dissolved	ug/L	ND	500	500	515	515	101	101	70-130	0	20	
Chromium, Dissolved	ug/L	ND	500	500	528	524	106	105	70-130	1	20	
Copper, Dissolved	ug/L	ND	500	500	513	510	102	102	70-130	1	20	
Iron, Dissolved	ug/L	ND	10000	10000	10300	10300	103	103	70-130	1	20	
Manganese, Dissolved	ug/L	ND	1000	1000	1010	1010	101	101	70-130	1	20	
Sodium, Dissolved	mg/L	10	20	20	30.4	30.5	102	102	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 266626 266627

Parameter	Units	1256635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium, Dissolved	ug/L	11.5	500	500	514	513	100	100	70-130	0	20	
Boron, Dissolved	ug/L	104	500	500	616	619	102	103	70-130	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
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(218) 742-1042

QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 266626 266627

Parameter	Units	1256635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	<10.0	500	500	530	526	105	104	70-130	1	20	
Copper, Dissolved	ug/L	<10.0	500	500	512	510	102	102	70-130	0	20	
Iron, Dissolved	ug/L	ND	10000	10000	10300	10300	103	103	70-130	0	20	
Manganese, Dissolved	ug/L	102	1000	1000	1110	1110	101	101	70-130	0	20	
Sodium, Dissolved	mg/L	31.7	20	20	52.2	52.2	103	102	70-130	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
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QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: MPRP/6143 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET Dissolved
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 266628 Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	11/10/15 14:12	
Cadmium, Dissolved	ug/L	ND	0.20	11/10/15 14:12	
Lead, Dissolved	ug/L	ND	0.50	11/10/15 14:12	

LABORATORY CONTROL SAMPLE: 266629

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	500	521	104	85-115	
Cadmium, Dissolved	ug/L	500	523	105	85-115	
Lead, Dissolved	ug/L	500	525	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 266630 266631

Parameter	Units	1256611001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	ND	500	500	534	521	107	104	70-130	3	20	
Cadmium, Dissolved	ug/L	ND	500	500	541	528	108	106	70-130	2	20	
Lead, Dissolved	ug/L	ND	500	500	544	532	109	106	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(218) 742-1042

QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: WET/21338 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 268165 Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	11/13/15 12:14	

LABORATORY CONTROL SAMPLE: 268166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	101	101	90-110	

SAMPLE DUPLICATE: 268167

Parameter	Units	1256712001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	790	795	1	20	

SAMPLE DUPLICATE: 268168

Parameter	Units	1256794001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	324	332	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
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QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: WET/21362 — Analysis Method: SM 2510B
QC Batch Method: SM 2510B — Analysis Description: 2510B Specific Conductance
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 268532 — Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	10.0	11/16/15 10:09	

LABORATORY CONTROL SAMPLE: 268533

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1413	1406	100	90-110	

SAMPLE DUPLICATE: 268534

Parameter	Units	1256954002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	2815	2820	0	20	

SAMPLE DUPLICATE: 268535

Parameter	Units	1256954011 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1759	1759	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
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QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: WET/21247
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 1256796001, 1256796002

LABORATORY CONTROL SAMPLE: 266212

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 266213

Parameter	Units	1256796001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	6.9	0	10	H6

SAMPLE DUPLICATE: 266214

Parameter	Units	1256814002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.6	0	10	H6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
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QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: WET/21309 Analysis Method: USGS I-3765
QC Batch Method: USGS I-3765 Analysis Description: USGS I-3765 Total Suspended Solids
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 267641 Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	11/12/15 09:11	

LABORATORY CONTROL SAMPLE: 267642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	239	228	95	80-120	

SAMPLE DUPLICATE: 267643

Parameter	Units	1256750002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	400	372	7	10	

SAMPLE DUPLICATE: 267644

Parameter	Units	1256879003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	132	134	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
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(218) 742-1042

QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: WETA/14721 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 268630 Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	11/18/15 06:13	
Sulfate	mg/L	ND	2.0	11/18/15 06:13	

LABORATORY CONTROL SAMPLE: 268631

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.6	101	90-110	
Sulfate	mg/L	50	49.0	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 268632 268633

Parameter	Units	1256742001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.8	250	250	280	280	103	103	90-110	0	20	
Sulfate	mg/L	456	250	250	704	704	99	99	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 268634 268635

Parameter	Units	1256740006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.4	50	50	56.2	56.2	104	104	90-110	0	20	
Sulfate	mg/L	97.9	50	50	149	149	102	102	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: WETA/14728 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia Distilled
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 268751 Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	11/18/15 10:40	

LABORATORY CONTROL SAMPLE: 268752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	9.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 268753 268754

Parameter	Units	1257060001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	10	10	9.8	9.9	97	98	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 268755 268756

Parameter	Units	1257032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	7.5	10	10	16.9	17.1	94	96	90-110	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

QUALITY CONTROL DATA

Project: Camp Ripley DDLF
Pace Project No.: 1256796

QC Batch: WETA/14681 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 1256796001, 1256796002

METHOD BLANK: 267820 Matrix: Water
Associated Lab Samples: 1256796001, 1256796002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	11/13/15 13:20	

LABORATORY CONTROL SAMPLE: 267821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 267822 267823

Parameter	Units	1256564001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2	2	2.0	2.0	98	98	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 267824 267825

Parameter	Units	1256553001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2	2	2.0	2.0	99	99	90-110	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

QUALIFIERS

Project: Camp Ripley DDLF
Pace Project No.: 1256796

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

H6	Analysis initiated outside of the 15 minute EPA recommended holding time.

Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Camp Ripley DDLF
Pace Project No.: 1256796

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1256796001	**DDLF-4**	EPA 200.7	MPRP/6142	EPA 200.7	ICP/4741
1256796002	**DDLF-5**	EPA 200.7	MPRP/6142	EPA 200.7	ICP/4741
1256796001	**DDLF-4**	EPA 200.8	MPRP/6143	EPA 200.8	ICPM/4281
1256796002	**DDLF-5**	EPA 200.8	MPRP/6143	EPA 200.8	ICPM/4281
1256796001	**DDLF-4**	EPA 7470	MERP/1789	EPA 7470	MERC/2296
1256796002	**DDLF-5**	EPA 7470	MERP/1789	EPA 7470	MERC/2296
1256796001	**DDLF-4**	SM 2320B	WET/21338		
1256796002	**DDLF-5**	SM 2320B	WET/21338		
1256796001	**DDLF-4**	SM 2510B	WET/21362		
1256796002	**DDLF-5**	SM 2510B	WET/21362		
1256796001	**DDLF-4**	SM 4500-H+B	WET/21247		
1256796002	**DDLF-5**	SM 4500-H+B	WET/21247		
1256796001	**DDLF-4**	USGS I-3765	WET/21309		
1256796002	**DDLF-5**	USGS I-3765	WET/21309		
1256796001	**DDLF-4**	EPA 300.0	WETA/14721		
1256796002	**DDLF-5**	EPA 300.0	WETA/14721		
1256796001	**DDLF-4**	EPA 350.1	WETA/14728	EPA 350.1	WETA/14753
1256796002	**DDLF-5**	EPA 350.1	WETA/14728	EPA 350.1	WETA/14753
1256796001	**DDLF-4**	EPA 353.2	WETA/14681		
1256796002	**DDLF-5**	EPA 353.2	WETA/14681		

CHAIN-OF-CUSTODY RECORD

WIDSETH SMITH NOLTING

ALEXANDRIA
610 Fillmore St.
Alexandria, MN 56308-1028
TEL: 320.762.8149
FAX: 320.762.0263

BEMIDJI
315 5th St. NW
Bemidji, MN 56601
TEL: 218.444.1859
FAX: 218.444.1860

BRAINERD/BAXTER
7804 Industrial Park Rd.
Baxter, MN 56425
TEL: 218.829.5117
FAX: 218.829.2517

CROOKSTON
216 South Main
Crookston, MN 56716
TEL: 218.281.6522
FAX: 218.281.6545

GRAND FORKS
2715 S. Washington
Grand Forks, ND 58201
TEL: 701.795.1975
FAX: 701.795.1978

ENGINEERING ARCHITECTURE LAND SURVEYING ENVIRONMENTAL SERVICES

PROJECT NUMBER	PROJECT NAME	NUMBER OF CONTAINERS	ANALYSES REQUEST
0283B0009.015	Camp Ripley DDLF		
	LOCATION: Rendall, MN		
SAMPLERS: (Signature)			
SAMPLERS: (Print) Michael Bryant			

WO#: 1256796
PM: MMW Due Date: 11/20/15
CLIENT: WSN

SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	SAMPLE MATERIAL	NUMBER OF CONTAINERS	See Attached List	REMARKS
DDLF-4	11/5/15	12:24		X	H_2O	7	X	HNO3 Are Filtered
DDLF-5	11/5/15	13:15		X	H_2O	7	X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	11/5/15 16:00				
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Report To: Greg Smith	
			11-6-15 1500	Bill To: WSN 0283B0009-015	

Distribution: White – Accompanies Shipment; Pink – Project File; Yellow – Laboratory

№ 5414

T=1.2

- Brief reiteration (one or two paragraphs) for each of the following topics:
  - Hydrology;
  - Geology;
  - Hydrogeology;
  - Geochemistry.
- Description of historical and current groundwater flow directions;
- Discussion of the analysis performed (including field parameters);
- Discussion of any exceedances of performance standards;
- Discussion of trends (if any);
- Description of any problems that may have been encountered;
- Summary;
- Conclusions;
- Recommendations;
- Figures (including survey information described in Sections 2.1 through 2.4);
- Attachments:
  - Laboratory analytical results;
  - Field data sheets;
- Tables:
  - Required analytes and sampling frequency;
  - Measured field parameters;
  - Static water elevations (in MSL);
  - Summary of monitoring well information.

Additionally, the Contractor will complete and provide to DMA for submittal, the MPCA's Solid Waste Land Disposal Facility Annual Report (W-SW7-02). One MPCA Solid Waste Land Disposal Annual Report shall be completed for the MMLF and on MPCA Solid Waste Land Disposal Annual Report shall be completed for the DDLF for each reporting year; they are to be submitted to DMA no later than 15 January of the year proceeding the reporting year.

2.4 Groundwater Scope of Work

Groundwater sampling, laboratory analysis and groundwater reporting work described under Section 2 "Groundwater Sampling/Analysis and Annual Report" is to be completed in Calendar Year 2013, Calendar Year 2014, Calendar Year 2015 and Calendar Year 2016 with deliverables being submitted concurrent with survey work in the calendar year immediately proceeding the sample event.

Parameter Lists for Sampling of Ground Water Monitoring Network

DDLF Samples

MDH 468 List (Organics)

Analytes

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene

1,1,2-Trichloroethane
1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethane
1,1-Dichloroethylene (Vinylidene chloride)
1,1-Dichloropropene
1,2-Dichloroethylene (trans)

Organics (con't.)

1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene (meta-)
1,3-Dichloropropane
1,3-Dichloropropene (cis + trans)
1,4-Dichlorobenzene (para-)
2,2-Dichloropropane
2-Chlorotoluene (ortho-)
4-Chlorotoluene (para-)
Acetone
Allyl chloride (3 chloropropene)
Benzene
Bromobenzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dichlorobromomethane)
Bromoform
Bromomethane (Methyl bromide)
Carbon tetrachloride
Chlorobenzene (monochlorobenzene)
Chlorodibromomethane (Dibromochloromethane)
Chloroethane
Chloroform
Chloromethane (Methyl chloride)
Cumene (Isopropylbenzene)
Dibromochloropropane (DBCP)
Dibromomethane (Methylene bromide)
Dichlorodifluoromethane
Dichlorofluoromethane
Dichloromethane (Methylene chloride)
Ethyl benzene
Ethyl ether
Hexachlorobutadiene
Methyl ethyl ketone (MEK)
Methyl isobutyl ketone (4-Methyl-2-pentanone)
Methyl tertiary-butyl ether (MTBE)
Naphthalene
1,2,4-Trimethylbenzene
1,2-Dibromoethane (Ethylene dibromide o
EDB)
1,2-Dichlorobenzene (orth-)
1,2-Dichloroethane
1,2-Dichloroethylene (cis-)
n-Butyl benzene
n-Propyl benzene
p-Isopropyltoluene
sec-Butyl benzene
Styrene
tert-Butyl benzene
Tetrachloroethylene (Perchloroethylene)
Tetrahydrofuran
Toluene
Trichloroethylene (TCE)
Trichlorofluoromethane
Vinyl chloride (chloroethene)
Xylenes (mixture of o, m, p)

Inorganics

Alkalinity, total as calcium carbonate
Ammonia Nitrogen
Arsenic, dissolved
Barium, dissolved
Boron, dissolved
Cadmium, dissolved
Chloride
Chromium, total dissolved
Copper, dissolved
Iron, dissolved
Lead, dissolved
Manganese, dissolved
Mercury, dissolved
Nitrate + Nitrite, as N
Sodium, dissolved
Sulfate
Suspended Solids, total
Appearance (b);
Dissolved Oxygen, field
pH (a)
Specific Conductance (a)
Temperature (a)
Turbidity, field
Water Elevation

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, MI

Sample Condition Upon Receipt

Client Name: CAMP RIPLEY

Project # WO# : 1256796

1256796

Courier: ☐Fed Ex ☑UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐Yes ☑No **Seals Intact?** ☐Yes ☑No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐Bubble Wrap ☑Bubble Bags ☐None ☐Other: **Temp Blank?** ☑Yes ☐No

Thermometer Used: ☑ 140792808 **Type of Ice:** ☑Wet ☐Blue ☐None ☑Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.9 **Cooler Temp Corrected °C:** 1.2 **Biological Tissue Frozen?** ☐Yes ☐No ☑NA

Temp should be above freezing to 6°C Correction Factor: 0.3 **Date and Initials of Person Examining Contents:** 11-6-15 CR

				Comments:
Chain of Custody Present?	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out?	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished?	☑Yes	☐No	☐N/A	3.
Sampler Name and Signature on COC?	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72 hr)?	☑Yes	☐No	☐N/A	6. pH
Rush Turn Around Time Requested?	☐Yes	☑No	☐N/A	7.
Sufficient Volume?	☑Yes	☐No	☐N/A	8.
Correct Containers Used?	☑Yes	☐No	☐N/A	9.
-Pace Containers Used?	☑Yes	☐No	☐N/A	
Containers Intact?	☑Yes	☐No	☐N/A	10.
Filtered Volume Received for Dissolved Tests?	☑Yes	☐No	☐N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☐Yes	☑No	☐N/A	12. ALL BOTTLE LABELS SAY "VOC"
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐Yes	☑No	☐N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐Yes	☐No	☑N/A	13.
Headspace in VOA Vials (>6mm)?	☐Yes	☐No	☑N/A	14.
Trip Blank Present?	☐Yes	☐No	☑N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Lisa Woods **Date:** 11/9/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

November 20, 2015

MeLisa M Woods
Pace Analytical Services, Inc. Virginia
315 Chestnut Street
Virginia, MN 55792

Work Order Number: 1504962
RE: Vinyl Chloride Analysis

Enclosed are the results of analyses for samples received by the laboratory on 11/10/15. If you have any questions concerning this report, please feel free to contact me.

Results are not blank corrected unless noted within the report. Additionally, all QC results meet requirements unless noted.

All samples will be retained by Legend Technical Services, Inc., unless consumed in the analysis, at ambient conditions for 30 days from the date of this report and then discarded unless other arrangements are made. All samples were received in acceptable condition unless otherwise noted.

All test results and QC meet requirements of the 2003 NELAC standard.

MDH (NELAP) Accreditation #027-123-295

Prepared by,
LEGEND TECHNICAL SERVICES, INC

Samantha Jaworski
Organic Department Manager
sjaworski@legend-group.com

LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis	
315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DDLF-4	1504962-01	Groundwater	11/05/15 12:24	11/10/15 09:50
DDLF-5	1504962-02	Groundwater	11/05/15 13:15	11/10/15 09:50

Shipping Container Information

Default Cooler Temperature (°C): 0.7

Received on ice: Yes
Temperature blank was present
Received on ice pack: No
Received on melt water: No
Ambient: No
Acceptable (IH/ISO only): No
Custody seals: Yes

Case Narrative:

LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis	
315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DDLF-4 (1504962-01) Groundwater Sampled: 11/05/15 12:24 Received: 11/10/15 9:50										
1,1,1,2-Tetrachloroethane	<1.0	1.0	0.024	ug/L	1	B5K1325	11/13/15	11/13/15	EPA 8260B	
1,1,1-Trichloroethane	<1.0	1.0	0.069	ug/L	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.50	0.50	0.051	ug/L	1	"	"	"	"	
1,1,2-Trichloroethane	<0.50	0.50	0.10	ug/L	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<1.0	1.0	0.081	ug/L	1	"	"	"	"	T5
1,1-Dichloroethane	<1.0	1.0	0.050	ug/L	1	"	"	"	"	
1,1-Dichloroethene	<1.0	1.0	0.065	ug/L	1	"	"	"	"	
1,1-Dichloropropene	<1.0	1.0	0.15	ug/L	1	"	"	"	"	
1,2,3-Trichlorobenzene	<5.0	5.0	0.45	ug/L	1	"	"	"	"	
1,2,3-Trichloropropane	<0.20	0.20	0.056	ug/L	1	"	"	"	"	
1,2,4-Trichlorobenzene	<1.0	1.0	0.091	ug/L	1	"	"	"	"	
1,2,4-Trimethylbenzene	<1.0	1.0	0.054	ug/L	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<5.0	5.0	0.033	ug/L	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.50	0.50	0.042	ug/L	1	"	"	"	"	
1,2-Dichlorobenzene	<0.50	0.50	0.052	ug/L	1	"	"	"	"	
1,2-Dichloroethane	<0.25	0.25	0.064	ug/L	1	"	"	"	"	
1,2-Dichloropropane	<1.0	1.0	0.034	ug/L	1	"	"	"	"	
1,3,5-Trimethylbenzene	<1.0	1.0	0.046	ug/L	1	"	"	"	"	
1,3-Dichlorobenzene	<1.0	1.0	0.068	ug/L	1	"	"	"	"	
1,3-Dichloropropane	<1.0	1.0	0.15	ug/L	1	"	"	"	"	
1,4-Dichlorobenzene	<1.0	1.0	0.047	ug/L	1	"	"	"	"	
2,2-Dichloropropane	<5.0	5.0	0.28	ug/L	1	"	"	"	"	
2-Butanone	<20	20	0.33	ug/L	1	"	"	"	"	
2-Chlorotoluene	<1.0	1.0	0.052	ug/L	1	"	"	"	"	
4-Chlorotoluene	<1.0	1.0	0.041	ug/L	1	"	"	"	"	
Acetone	<20	20	0.32	ug/L	1	"	"	"	"	
Allyl chloride	<5.0	5.0	0.078	ug/L	1	"	"	"	"	
Benzene	<0.50	0.50	0.034	ug/L	1	"	"	"	"	
Bromobenzene	<1.0	1.0	0.042	ug/L	1	"	"	"	"	
Bromochloromethane	<1.0	1.0	0.10	ug/L	1	"	"	"	"	
Bromodichloromethane	<1.0	1.0	0.042	ug/L	1	"	"	"	"	
Bromoform	<5.0	5.0	0.080	ug/L	1	"	"	"	"	
Bromomethane	<2.5	2.5	0.17	ug/L	1	"	"	"	"	
Carbon tetrachloride	<0.50	0.50	0.029	ug/L	1	"	"	"	"	
Chlorobenzene	<1.0	1.0	0.037	ug/L	1	"	"	"	"	
Chloroethane	<2.5	2.5	0.062	ug/L	1	"	"	"	"	
Chloroform	<1.0	1.0	0.056	ug/L	1	"	"	"	"	
Chloromethane	<2.5	2.5	0.062	ug/L	1	"	"	"	"	

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www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis	
315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DDLF-4 (1504962-01) Groundwater Sampled: 11/05/15 12:24 Received: 11/10/15 9:50										
cis-1,2-Dichloroethene	<1.0	1.0	0.097	ug/L	1	B5K1325	11/13/15	11/13/15	EPA 8260B	
cis-1,3-Dichloropropene	<0.50	0.50	0.041	ug/L	1	"	"	"	"	
Dibromochloromethane	<0.50	0.50	0.070	ug/L	1	"	"	"	"	
Dibromomethane	<2.5	2.5	0.088	ug/L	1	"	"	"	"	
Dichlorodifluoromethane	<5.0	5.0	0.14	ug/L	1	"	"	"	"	
Dichlorofluoromethane	<1.0	1.0	0.059	ug/L	1	"	"	"	"	T5
Ethyl ether	<5.0	5.0	0.091	ug/L	1	"	"	"	"	
Ethylbenzene	<1.0	1.0	0.033	ug/L	1	"	"	"	"	
Hexachlorobutadiene	<2.5	2.5	0.19	ug/L	1	"	"	"	"	
Isopropylbenzene	<1.0	1.0	0.037	ug/L	1	"	"	"	"	
m,p-Xylene	<2.0	2.0	0.087	ug/L	1	"	"	"	"	
Methyl isobutyl ketone	<5.0	5.0	0.17	ug/L	1	"	"	"	"	
Methyl tert-butyl ether	<1.0	1.0	0.056	ug/L	1	"	"	"	"	
Methylene chloride	<2.5	2.5	0.10	ug/L	1	"	"	"	"	
Naphthalene	<5.0	5.0	0.032	ug/L	1	"	"	"	"	
n-Butylbenzene	<2.5	2.5	0.028	ug/L	1	"	"	"	"	
n-Propylbenzene	<1.0	1.0	0.040	ug/L	1	"	"	"	"	
o-Xylene	<1.0	1.0	0.053	ug/L	1	"	"	"	"	
p-Isopropyltoluene	<2.5	2.5	0.052	ug/L	1	"	"	"	"	
sec-Butylbenzene	<1.0	1.0	0.055	ug/L	1	"	"	"	"	
Styrene	<1.0	1.0	0.048	ug/L	1	"	"	"	"	
tert-Butylbenzene	<1.0	1.0	0.028	ug/L	1	"	"	"	"	
Tetrachloroethene	<1.0	1.0	0.035	ug/L	1	"	"	"	"	
Tetrahydrofuran	<20	20	0.34	ug/L	1	"	"	"	"	T5
Toluene	<1.0	1.0	0.064	ug/L	1	"	"	"	"	
trans-1,2-Dichloroethene	<1.0	1.0	0.058	ug/L	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.50	0.50	0.067	ug/L	1	"	"	"	"	
Trichloroethene	<0.50	0.50	0.096	ug/L	1	"	"	"	"	
Trichlorofluoromethane	<1.0	1.0	0.26	ug/L	1	"	"	"	"	
Vinyl chloride	<0.050	0.050	0.0083	ug/L	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*86.9*			*80-121 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*93.2*			*79.9-121 %*		"	"	"	"	
Surrogate: Toluene-d8	*92.4*			*80-120 %*		"	"	"	"	
DDLF-5 (1504962-02) Groundwater Sampled: 11/05/15 13:15 Received: 11/10/15 9:50										
1,1,1,2-Tetrachloroethane	<1.0	1.0	0.024	ug/L	1	B5K1325	11/13/15	11/13/15	EPA 8260B	
1,1,1-Trichloroethane	<1.0	1.0	0.069	ug/L	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.50	0.50	0.051	ug/L	1	"	"	"	"	
1,1,2-Trichloroethane	<0.50	0.50	0.10	ug/L	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<1.0	1.0	0.081	ug/L	1	"	"	"	"	T5

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www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis	
315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DDLF-5 (1504962-02) Groundwater Sampled: 11/05/15 13:15 Received: 11/10/15 9:50										
1,1-Dichloroethane	<1.0	1.0	0.050	ug/L	1	B5K1325	11/13/15	11/13/15	EPA 8260B	
1,1-Dichloroethene	<1.0	1.0	0.065	ug/L	1	"	"	"	"	
1,1-Dichloropropene	<1.0	1.0	0.15	ug/L	1	"	"	"	"	
1,2,3-Trichlorobenzene	<5.0	5.0	0.45	ug/L	1	"	"	"	"	
1,2,3-Trichloropropane	<0.20	0.20	0.056	ug/L	1	"	"	"	"	
1,2,4-Trichlorobenzene	<1.0	1.0	0.091	ug/L	1	"	"	"	"	
1,2,4-Trimethylbenzene	<1.0	1.0	0.054	ug/L	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<5.0	5.0	0.033	ug/L	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.50	0.50	0.042	ug/L	1	"	"	"	"	
1,2-Dichlorobenzene	<0.50	0.50	0.052	ug/L	1	"	"	"	"	
1,2-Dichloroethane	<0.25	0.25	0.064	ug/L	1	"	"	"	"	
1,2-Dichloropropane	<1.0	1.0	0.034	ug/L	1	"	"	"	"	
1,3,5-Trimethylbenzene	<1.0	1.0	0.046	ug/L	1	"	"	"	"	
1,3-Dichlorobenzene	<1.0	1.0	0.068	ug/L	1	"	"	"	"	
1,3-Dichloropropane	<1.0	1.0	0.15	ug/L	1	"	"	"	"	
1,4-Dichlorobenzene	<1.0	1.0	0.047	ug/L	1	"	"	"	"	
2,2-Dichloropropane	<5.0	5.0	0.28	ug/L	1	"	"	"	"	
2-Butanone	<20	20	0.33	ug/L	1	"	"	"	"	
2-Chlorotoluene	<1.0	1.0	0.052	ug/L	1	"	"	"	"	
4-Chlorotoluene	<1.0	1.0	0.041	ug/L	1	"	"	"	"	
Acetone	<20	20	0.32	ug/L	1	"	"	"	"	
Allyl chloride	<5.0	5.0	0.078	ug/L	1	"	"	"	"	
Benzene	<0.50	0.50	0.034	ug/L	1	"	"	"	"	
Bromobenzene	<1.0	1.0	0.042	ug/L	1	"	"	"	"	
Bromochloromethane	<1.0	1.0	0.10	ug/L	1	"	"	"	"	
Bromodichloromethane	<1.0	1.0	0.042	ug/L	1	"	"	"	"	
Bromoform	<5.0	5.0	0.080	ug/L	1	"	"	"	"	
Bromomethane	<2.5	2.5	0.17	ug/L	1	"	"	"	"	
Carbon tetrachloride	<0.50	0.50	0.029	ug/L	1	"	"	"	"	
Chlorobenzene	<1.0	1.0	0.037	ug/L	1	"	"	"	"	
Chloroethane	<2.5	2.5	0.062	ug/L	1	"	"	"	"	
Chloroform	<1.0	1.0	0.056	ug/L	1	"	"	"	"	
Chloromethane	<2.5	2.5	0.062	ug/L	1	"	"	"	"	
cis-1,2-Dichloroethene	<1.0	1.0	0.097	ug/L	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.50	0.50	0.041	ug/L	1	"	"	"	"	
Dibromochloromethane	<0.50	0.50	0.070	ug/L	1	"	"	"	"	
Dibromomethane	<2.5	2.5	0.088	ug/L	1	"	"	"	"	
Dichlorodifluoromethane	<5.0	5.0	0.14	ug/L	1	"	"	"	"	
Dichlorofluoromethane	<1.0	1.0	0.059	ug/L	1	"	"	"	"	T5

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www.legend-group.com

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St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis	
315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DDLF-5 (1504962-02) Groundwater Sampled: 11/05/15 13:15 Received: 11/10/15 9:50										
Ethyl ether	<5.0	5.0	0.091	ug/L	1	B5K1325	11/13/15	11/13/15	EPA 8260B	
Ethylbenzene	<1.0	1.0	0.033	ug/L	1	"	"	"	"	
Hexachlorobutadiene	<2.5	2.5	0.19	ug/L	1	"	"	"	"	
Isopropylbenzene	<1.0	1.0	0.037	ug/L	1	"	"	"	"	
m,p-Xylene	<2.0	2.0	0.087	ug/L	1	"	"	"	"	
Methyl isobutyl ketone	<5.0	5.0	0.17	ug/L	1	"	"	"	"	
Methyl tert-butyl ether	<1.0	1.0	0.056	ug/L	1	"	"	"	"	
Methylene chloride	<2.5	2.5	0.10	ug/L	1	"	"	"	"	
Naphthalene	<5.0	5.0	0.032	ug/L	1	"	"	"	"	
n-Butylbenzene	<2.5	2.5	0.028	ug/L	1	"	"	"	"	
n-Propylbenzene	<1.0	1.0	0.040	ug/L	1	"	"	"	"	
o-Xylene	<1.0	1.0	0.053	ug/L	1	"	"	"	"	
p-Isopropyltoluene	<2.5	2.5	0.052	ug/L	1	"	"	"	"	
sec-Butylbenzene	<1.0	1.0	0.055	ug/L	1	"	"	"	"	
Styrene	<1.0	1.0	0.048	ug/L	1	"	"	"	"	
tert-Butylbenzene	<1.0	1.0	0.028	ug/L	1	"	"	"	"	
Tetrachloroethene	<1.0	1.0	0.035	ug/L	1	"	"	"	"	
Tetrahydrofuran	<20	20	0.34	ug/L	1	"	"	"	"	T5
Toluene	<1.0	1.0	0.064	ug/L	1	"	"	"	"	
trans-1,2-Dichloroethene	<1.0	1.0	0.058	ug/L	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.50	0.50	0.067	ug/L	1	"	"	"	"	
Trichloroethene	<0.50	0.50	0.096	ug/L	1	"	"	"	"	
Trichlorofluoromethane	<1.0	1.0	0.26	ug/L	1	"	"	"	"	
Vinyl chloride	<0.050	0.050	0.0083	ug/L	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*90.0*			*80-121 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*94.0*			*79.9-121 %*		"	"	"	"	
Surrogate: Toluene-d8	*94.3*			*80-120 %*		"	"	"	"	

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315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5K1325 - EPA 5030 Water (Purge and Trap)											
Blank (B5K1325-BLK1)					Prepared & Analyzed: 11/13/15						
1,1,1,2-Tetrachloroethane	< 1.0	1.0	0.024	ug/L							
1,1,1-Trichloroethane	< 1.0	1.0	0.069	ug/L							
1,1,2,2-Tetrachloroethane	< 0.50	0.50	0.051	ug/L							
1,1,2-Trichloroethane	< 0.50	0.50	0.10	ug/L							
1,1,2-Trichlorotrifluoroethane	< 1.0	1.0	0.081	ug/L							
1,1-Dichloroethane	< 1.0	1.0	0.050	ug/L							
1,1-Dichloroethene	< 1.0	1.0	0.065	ug/L							
1,1-Dichloropropene	< 1.0	1.0	0.15	ug/L							
1,2,3-Trichlorobenzene	< 5.0	5.0	0.45	ug/L							
1,2,3-Trichloropropane	< 0.20	0.20	0.056	ug/L							
1,2,4-Trichlorobenzene	< 1.0	1.0	0.091	ug/L							
1,2,4-Trimethylbenzene	< 1.0	1.0	0.054	ug/L							
1,2-Dibromo-3-chloropropane	< 5.0	5.0	0.033	ug/L							
1,2-Dibromoethane (EDB)	< 0.50	0.50	0.042	ug/L							
1,2-Dichlorobenzene	< 0.50	0.50	0.052	ug/L							
1,2-Dichloroethane	< 0.25	0.25	0.064	ug/L							
1,2-Dichloropropane	< 1.0	1.0	0.034	ug/L							
1,3,5-Trimethylbenzene	< 1.0	1.0	0.046	ug/L							
1,3-Dichlorobenzene	< 1.0	1.0	0.068	ug/L							
1,3-Dichloropropane	< 1.0	1.0	0.15	ug/L							
1,4-Dichlorobenzene	< 1.0	1.0	0.047	ug/L							
2,2-Dichloropropane	< 5.0	5.0	0.28	ug/L							
2-Butanone	< 20	20	0.33	ug/L							
2-Chlorotoluene	< 1.0	1.0	0.052	ug/L							
4-Chlorotoluene	< 1.0	1.0	0.041	ug/L							
Acetone	< 20	20	0.32	ug/L							
Allyl chloride	< 5.0	5.0	0.078	ug/L							
Benzene	< 0.50	0.50	0.034	ug/L							
Bromobenzene	< 1.0	1.0	0.042	ug/L							
Bromochloromethane	< 1.0	1.0	0.10	ug/L							
Bromodichloromethane	< 1.0	1.0	0.042	ug/L							
Bromoform	< 5.0	5.0	0.080	ug/L							
Bromomethane	< 2.5	2.5	0.17	ug/L							
Carbon tetrachloride	< 0.50	0.50	0.029	ug/L							
Chlorobenzene	< 1.0	1.0	0.037	ug/L							
Chloroethane	< 2.5	2.5	0.062	ug/L							
Chloroform	< 1.0	1.0	0.056	ug/L							
Chloromethane	< 2.5	2.5	0.062	ug/L							
cis-1,2-Dichloroethene	< 1.0	1.0	0.097	ug/L							

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88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis	
315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5K1325 - EPA 5030 Water (Purge and Trap)											
Blank (B5K1325-BLK1)					Prepared & Analyzed: 11/13/15						
cis-1,3-Dichloropropene	< 0.50	0.50	0.041	ug/L							
Dibromochloromethane	< 0.50	0.50	0.070	ug/L							
Dibromomethane	< 2.5	2.5	0.088	ug/L							
Dichlorodifluoromethane	< 5.0	5.0	0.14	ug/L							
Dichlorofluoromethane	< 1.0	1.0	0.059	ug/L							
Ethyl ether	< 5.0	5.0	0.091	ug/L							
Ethylbenzene	< 1.0	1.0	0.033	ug/L							
Hexachlorobutadiene	< 2.5	2.5	0.19	ug/L							
Isopropylbenzene	< 1.0	1.0	0.037	ug/L							
m,p-Xylene	< 2.0	2.0	0.087	ug/L							
Methyl isobutyl ketone	< 5.0	5.0	0.17	ug/L							
Methyl tert-butyl ether	< 1.0	1.0	0.056	ug/L							
Methylene chloride	< 2.5	2.5	0.10	ug/L							
Naphthalene	< 5.0	5.0	0.032	ug/L							
n-Butylbenzene	< 2.5	2.5	0.028	ug/L							
n-Propylbenzene	< 1.0	1.0	0.040	ug/L							
o-Xylene	< 1.0	1.0	0.053	ug/L							
p-Isopropyltoluene	< 2.5	2.5	0.052	ug/L							
sec-Butylbenzene	< 1.0	1.0	0.055	ug/L							
Styrene	< 1.0	1.0	0.048	ug/L							
tert-Butylbenzene	< 1.0	1.0	0.028	ug/L							
Tetrachloroethene	< 1.0	1.0	0.035	ug/L							
Tetrahydrofuran	< 20	20	0.34	ug/L							
Toluene	< 1.0	1.0	0.064	ug/L							
trans-1,2-Dichloroethene	< 1.0	1.0	0.058	ug/L							
trans-1,3-Dichloropropene	< 0.50	0.50	0.067	ug/L							
Trichloroethene	< 0.50	0.50	0.096	ug/L							
Trichlorofluoromethane	< 1.0	1.0	0.26	ug/L							
Vinyl chloride	< 0.050	0.050	0.0083	ug/L							
Surrogate: 4-Bromofluorobenzene	*50.0*			*ug/L*	*56.0*		*89.3*	*80-121*			
Surrogate: Dibromofluoromethane	*51.6*			*ug/L*	*56.0*		*92.1*	*79.9-121*			
Surrogate: Toluene-d8	*51.8*			*ug/L*	*56.0*		*92.5*	*80-120*			
LCS (B5K1325-BS1)					Prepared & Analyzed: 11/13/15						
1,1,2,2-Tetrachloroethane	55.7	0.50	0.051	ug/L	50.0		111	80-121			
1,1-Dichloroethane	50.2	1.0	0.050	ug/L	50.0		100	80-125			
1,1-Dichloroethene	47.2	1.0	0.065	ug/L	50.0		94.5	80-125			
1,3,5-Trimethylbenzene	50.2	1.0	0.046	ug/L	50.0		100	75.4-125			
1,4-Dichlorobenzene	47.6	1.0	0.047	ug/L	50.0		95.1	75-125			
2-Chlorotoluene	51.3	1.0	0.052	ug/L	50.0		103	75.4-125			

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88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis	
315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5K1325 - EPA 5030 Water (Purge and Trap)											
LCS (B5K1325-BS1)					Prepared & Analyzed: 11/13/15						
Benzene	48.2	0.50	0.034	ug/L	50.0		96.3	80-120			
Bromoform	44.3	5.0	0.080	ug/L	50.0		88.7	80-120			
Chlorobenzene	46.4	1.0	0.037	ug/L	50.0		92.7	80-120			
Chloroform	45.8	1.0	0.056	ug/L	50.0		91.7	80-123			
Ethylbenzene	45.4	1.0	0.033	ug/L	50.0		90.8	80-120			
n-Butylbenzene	49.9	2.5	0.028	ug/L	50.0		99.8	75-125			
n-Propylbenzene	52.9	1.0	0.040	ug/L	50.0		106	75.8-125			
Toluene	46.8	1.0	0.064	ug/L	50.0		93.6	80-120			
Trichloroethene	48.0	0.50	0.096	ug/L	50.0		96.0	80-120			
Vinyl chloride	48.4	0.050	0.0083	ug/L	50.0		96.8	75-130			
Surrogate: 4-Bromofluorobenzene	*49.8*			*ug/L*	*56.0*		*89.0*	*80-121*			
Surrogate: Dibromofluoromethane	*52.0*			*ug/L*	*56.0*		*92.8*	*79.9-121*			
Surrogate: Toluene-d8	*53.8*			*ug/L*	*56.0*		*96.1*	*80-120*			
Matrix Spike (B5K1325-MS1)		**Source: 1504960-01**			Prepared & Analyzed: 11/13/15						
1,1,2,2-Tetrachloroethane	54.4	0.50	0.051	ug/L	50.0	<0.50	109	76.8-125			
1,1-Dichloroethane	51.3	1.0	0.050	ug/L	50.0	<1.0	103	80-125			
1,1-Dichloroethene	49.5	1.0	0.065	ug/L	50.0	<1.0	99.0	80-125			
1,3,5-Trimethylbenzene	49.7	1.0	0.046	ug/L	50.0	<1.0	99.3	75-125			
1,4-Dichlorobenzene	47.8	1.0	0.047	ug/L	50.0	<1.0	95.5	75-125			
2-Chlorotoluene	51.4	1.0	0.052	ug/L	50.0	<1.0	103	75-125			
Benzene	49.7	0.50	0.034	ug/L	50.0	<0.50	99.4	80-120			
Bromoform	45.4	5.0	0.080	ug/L	50.0	<5.0	90.9	80-120			
Chlorobenzene	46.6	1.0	0.037	ug/L	50.0	<1.0	93.2	80-120			
Chloroform	46.5	1.0	0.056	ug/L	50.0	<1.0	93.1	79.8-125			
Ethylbenzene	45.8	1.0	0.033	ug/L	50.0	<1.0	91.7	80-120			
n-Butylbenzene	50.3	2.5	0.028	ug/L	50.0	<2.5	101	75-130			
n-Propylbenzene	52.5	1.0	0.040	ug/L	50.0	<1.0	105	75-125			
Toluene	46.9	1.0	0.064	ug/L	50.0	<1.0	93.8	80-120			
Trichloroethene	48.2	0.50	0.096	ug/L	50.0	<0.50	96.4	80-120			
Vinyl chloride	51.0	0.050	0.0083	ug/L	50.0	<0.050	102	75-130			
Surrogate: 4-Bromofluorobenzene	*52.2*			*ug/L*	*56.0*		*93.3*	*80-121*			
Surrogate: Dibromofluoromethane	*51.7*			*ug/L*	*56.0*		*92.2*	*79.9-121*			
Surrogate: Toluene-d8	*53.6*			*ug/L*	*56.0*		*95.7*	*80-120*			
Matrix Spike Dup (B5K1325-MSD1)		**Source: 1504960-01**			Prepared & Analyzed: 11/13/15						
1,1,2,2-Tetrachloroethane	54.8	0.50	0.051	ug/L	50.0	<0.50	110	76.8-125	0.638	20	
1,1-Dichloroethane	52.5	1.0	0.050	ug/L	50.0	<1.0	105	80-125	2.40	20	
1,1-Dichloroethene	49.8	1.0	0.065	ug/L	50.0	<1.0	99.6	80-125	0.638	20	
1,3,5-Trimethylbenzene	50.8	1.0	0.046	ug/L	50.0	<1.0	102	75-125	2.22	20	

LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis	
315 Chestnut Street	Project Number:	1256796	Work Order #: 1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported: 11/20/15

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5K1325 - EPA 5030 Water (Purge and Trap)											
Matrix Spike Dup (B5K1325-MSD1)		**Source: 1504960-01**			Prepared & Analyzed: 11/13/15						
1,4-Dichlorobenzene	48.7	1.0	0.047	ug/L	50.0	<1.0	97.3	75-125	1.87	20	
2-Chlorotoluene	51.0	1.0	0.052	ug/L	50.0	<1.0	102	75-125	0.670	20	
Benzene	49.4	0.50	0.034	ug/L	50.0	<0.50	98.8	80-120	0.524	20	
Bromoform	46.9	5.0	0.080	ug/L	50.0	<5.0	93.8	80-120	3.12	20	
Chlorobenzene	48.1	1.0	0.037	ug/L	50.0	<1.0	96.3	80-120	3.21	20	
Chloroform	47.9	1.0	0.056	ug/L	50.0	<1.0	95.8	79.8-125	2.91	20	
Ethylbenzene	46.9	1.0	0.033	ug/L	50.0	<1.0	93.8	80-120	2.26	20	
n-Butylbenzene	50.7	2.5	0.028	ug/L	50.0	<2.5	101	75-130	0.795	20	
n-Propylbenzene	53.2	1.0	0.040	ug/L	50.0	<1.0	106	75-125	1.39	20	
Toluene	47.7	1.0	0.064	ug/L	50.0	<1.0	95.4	80-120	1.63	20	
Trichloroethene	48.8	0.50	0.096	ug/L	50.0	<0.50	97.6	80-120	1.25	20	
Vinyl chloride	51.2	0.050	0.0083	ug/L	50.0	<0.050	102	75-130	0.417	20	
Surrogate: 4-Bromofluorobenzene	*51.9*			*ug/L*	*56.0*		*92.7*	*80-121*			
Surrogate: Dibromofluoromethane	*52.0*			*ug/L*	*56.0*		*92.8*	*79.9-121*			
Surrogate: Toluene-d8	*52.8*			*ug/L*	*56.0*		*94.3*	*80-120*			

LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Pace Analytical Services, Inc. Virginia	Project:	Vinyl Chloride Analysis		
315 Chestnut Street	Project Number:	1256796	Work Order #:	1504962
Virginia, MN 55792	Project Manager:	MeLisa M Woods	Date Reported:	11/20/15

Notes and Definitions

T5	Laboratory not licensed for this parameter.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit; Equivalent to the method LOD (Limit of Detection)
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

1504962

Chain of Custody

Pace Analytical
www.pacelabs.com

Workorder: 1256796 Workorder Name: Camp Ripley DDLF Results Requested 11/20/2015

Report / Invoice To
Melisa M Woods
Pace Analytical Virginia
315 Chestnut Street
Virginia, MN 55792
Phone (218) 742-1042
Email: melisa.woods@pacelabs.com

Subcontract To
Legend

P.O. VM1256796

Requested Analysis: 8260B VOCLL – RL 0.05; See attached MDH 468 List

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HCL	8260B VOCLL – RL 0.05	LAB USE ONLY
1	DDLF-4	11/5/2015 12:24	1256796001	Water		X	01AC
2	DDLF-5	11/5/2015 13:15	1256796002	Water		X	02L
3							
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	Melisa Woods	11/9/15 1315		
2				
3			VR	11/10/15 930

Comments:

Cooler Temperature on Receipt 0.7 °C | Custody Seal Y or (N) | Received on Ice (Y) or N | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Monday, November 09, 2015 1:26:42 PM FMT-ALL-C-002rev.00 24March2009 Page 1 of 1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LEGEND
Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

of Ground Water Monitoring Network

DDLF Samples

MDH 468 List (Organics)

Analytes

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene

Project No. 13134
410-01XA

EXHIBIT A
Page 5 of 8

Contract No. 68852

1,1,2-Trichloroethane
1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethane
1,1-Dichloroethylene (Vinylidene chloride)
1,1-Dichloropropene
1,2-Dichloroethylene (trans)

Organics (con't.)

1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene (meta-)
1,3-Dichloropropane
1,3-Dichloropropene (cis + trans)
1,4-Dichlorobenzene (para-)
2,2-Dichloropropane
2-Chlorotoluene (ortho-)
4-Chlorotoluene (para-)
Acetone
Allyl chloride (3 chloropropene)
Benzene
Bromobenzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dichlorobromomethane)
Bromoform
Bromomethane (Methyl bromide)
Carbon tetrachloride
Chlorobenzene (monochlorobenzene)
Chlorodibromomethane (Dibromochloromethane)
Chloroethane
Chloroform
Chloromethane (Methyl chloride)
Cumene (Isopropylbenzene)
Dibromochloropropane (DBCP)
Dibromomethane (Methylene bromide)
Dichlorodifluoromethane
Dichlorofluoromethane
Dichloromethane (Methylene chloride)
Ethyl benzene
Ethyl ether
Hexachlorobutadiene
Methyl ethyl ketone (MEK)
Methyl isobutyl ketone (4-Methyl-2-pentanone)
Methyl tertiary-butyl ether (MTBE)
Naphthalene
1,2,4-Trimethylbenzene
1,2-Dibromoethane (Ethylene dibromide o
EDB)
1,2-Dichlorobenzene (orth-)
1,2-Dichloroethane
1,2-Dichloroethylene (cis-)
n-Butyl benzene
n-Propyl benzene
p-Isopropyltoluene
sec-Butyl benzene
Styrene
tert-Butyl benzene
Tetrachloroethylene (Perchloroethylene)
Tetrahydrofuran
Toluene
Trichloroethylene (TCE)
Trichlorofluoromethane
Vinyl chloride (chloroethene)
Xylenes (mixture of o, m, p)

Inorganics

Alkalinity, total as calcium carbonate
Ammonia Nitrogen
Arsenic, dissolved
Barium, dissolved
Boron, dissolved
Cadmium, dissolved
Chloride
Chromium, total dissolved
Copper, dissolved
Iron, dissolved
Lead, dissolved
Manganese, dissolved
Mercury, dissolved
Nitrate + Nitrite, as N
Sodium, dissolved
Sulfate
Suspended Solids, total
Appearance (b);
Dissolved Oxygen, field
pH (a)
Specific Conductance (a)
Temperature (a)
Turbidity, field
Water Elevation

APPENDIX B

WELL STABILIZATION FORMS

WIDSETH SMITH NOLTING

ALEXANDRIA	BEMIDJI	BRAINERD	CROOKSTON	GRAND FORKS
320-762-8149	218-759-8509	218-829-5117	218-281-6522	701-795-1975
Fax 762-0263	Fax 759-8516	Fax 829-2517	Fax 281-6545	Fax 795-1978

ENGINEERS
ARCHITECTS
LAND SURVEYORS
ENVIRONMENTAL SERVICES

DATE: 11/5/15

PROJECT NAME: Camp Ripley PROJECT NUMBER: 0283B0009.015

LOCATION: Randall, MN WEATHER: Overcast / Lt. Rain

TEMP. MIN. 43°F TEMP MAX. 48°F ENGINEER PERSONNEL: MAB

CONTRACTOR (S):

SUBCONTRACTOR WORKING:

WORK DONE BY ENGINEER: Fall Sampling Event

DAILY PROGRESS- (Subcontractors & Sub contractors): On site @ 8:45. checked in at front gate. Checked in with Tim @ Range Control and completed training. Picked up a key for the wells from Sara at Admin bldg. Checked static water level and sampled MW-7, MW-5 and MW-3 in that order. After sampling the closed landfill I stopped at the transfer station and grabbed a key for the demolition landfill gate. I sampled DDLF-4 & DDLF-5. Also checked static on DDLF-1, DDLF-2 & DDLF-3. I returned the gate key for the Demo landfill to range control & returned the well key to Sara. Samples will be sent to Pace Virginia

REMARKS:

SIGNED: DATE SIGNED: 11/5/15

(If more space is required, use other side)

WIDSETH SMITH NOLTING & ASSOCIATES

MONITORING/TEST WELL STABILIZATION FORM

SITE: Camp Ripley

DATE: 11/5/15

TIME:

SAMPLE DESIGNATION: ~~EQUIPMENT~~ DOLF-4

WEATHER CONDITIONS: Overcast

PERSONNEL: MB

PUMP RATE (GPM): .5/.1

WELL DEPTH: 35.00

STATIC LEVEL: 24.58

WELL VOLUME (GAL): 1.67

LOCK:	YES	X	NO	
WELL LABEL:	YES	X	NO	

CONDITION OF WELL: Good

PURGE METHOD: Whale

SAMPLE METHOD: Whale

APPEARANCE:

WIDSETH SMITH NOLTING

Engineering
Architecture
Surveying
Environmental

FIELD DUPLICATE

YES ☐

NO ☒

FLOW CELL USED

YES ☒

NO ☐

EXCEPTIONS TO PROTOCOL:

NONE ☐

TIME	TEMP. FAHRENHEIT (+/- 0.5)	SPECIFIC CONDUCTANCE (mS/cm +/- 5%)	DISSOLVED OXYGEN (+/- 0.5 mg/l)	Ph (+/- 0.04 SU)	ORP (mv)	TURBIDITY (+/- 10 NTU)	VOL. REMOVED (gal.)
12:10	48.0	.113	9.47	7.10	199	42.4	2.0
12:14	48.0	.113	9.37	7.07	202	40.2	4.0
12:18	48.0	.113	9.35	7.05	203	38.4	6.0
INITIAL							
2nd RECHARGE							
3rd RECHARGE							

COMMENTS:

TIME SAMPLED 12:24

WIDSETH SMITH NOLTING & ASSOCIATES

MONITORING/TEST WELL STABILIZATION FORM

SITE: Camp Ripley

DATE: 11/5/15

TIME:

SAMPLE DESIGNATION: DDLF-5

WEATHER CONDITIONS: Overcast

PERSONNEL: MNB

PUMP RATE (GPM): .50 1.10

WELL DEPTH: 42.00

STATIC LEVEL: 27.44

WELL VOLUME (GAL): 2.33

LOCK: YES X NO

WELL LABEL: YES Y NO

CONDITION OF WELL: Good

PURGE METHOD: Whale

SAMPLE METHOD: Whale

APPEARANCE: Clear

WIDSETH SMITH NOLTING

Engineering
Architecture
Surveying
Environmental

FIELD DUPLICATE
YES ☐
NO ☐

FLOW CELL USED
YES ☐
NO ☐

EXCEPTIONS TO PROTOCOL: NONE ☐

TIME	TEMP. FAHRENHEIT (+/- 0.5)	SPECIFIC CONDUCTANCE (mS/cm +/- 5%)	DISSOLVED OXYGEN (+/- 0.5 mg/l)	Ph (+/- 0.04 SU)	ORP (mv)	TURBIDITY (+/- 10 NTU)	VOL. REMOVED (gal.)
13:00	47.7	.055	8.67	6.40	275	49.8	2.5
13:05	47.6	.058	8.58	6.37	280	44.7	5.0
13:10	47.6	.059	8.56	6.34	282	39.4	7.5
INITIAL							
2nd RECHARGE							
3rd RECHARGE							

COMMENTS:

TIME SAMPLED 13:15

DDLF-1 29.14

DDLF-2 20.01

DDLF-3 27.41

APPENDIX C

EVALUATION REPORTS

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 31 Dec 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 4 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

_____

_____

_____

7. Remarks or comments: _____

_____

8. Operator Name: Jesse Turner

Signature: Jesse Turner

Vmtt

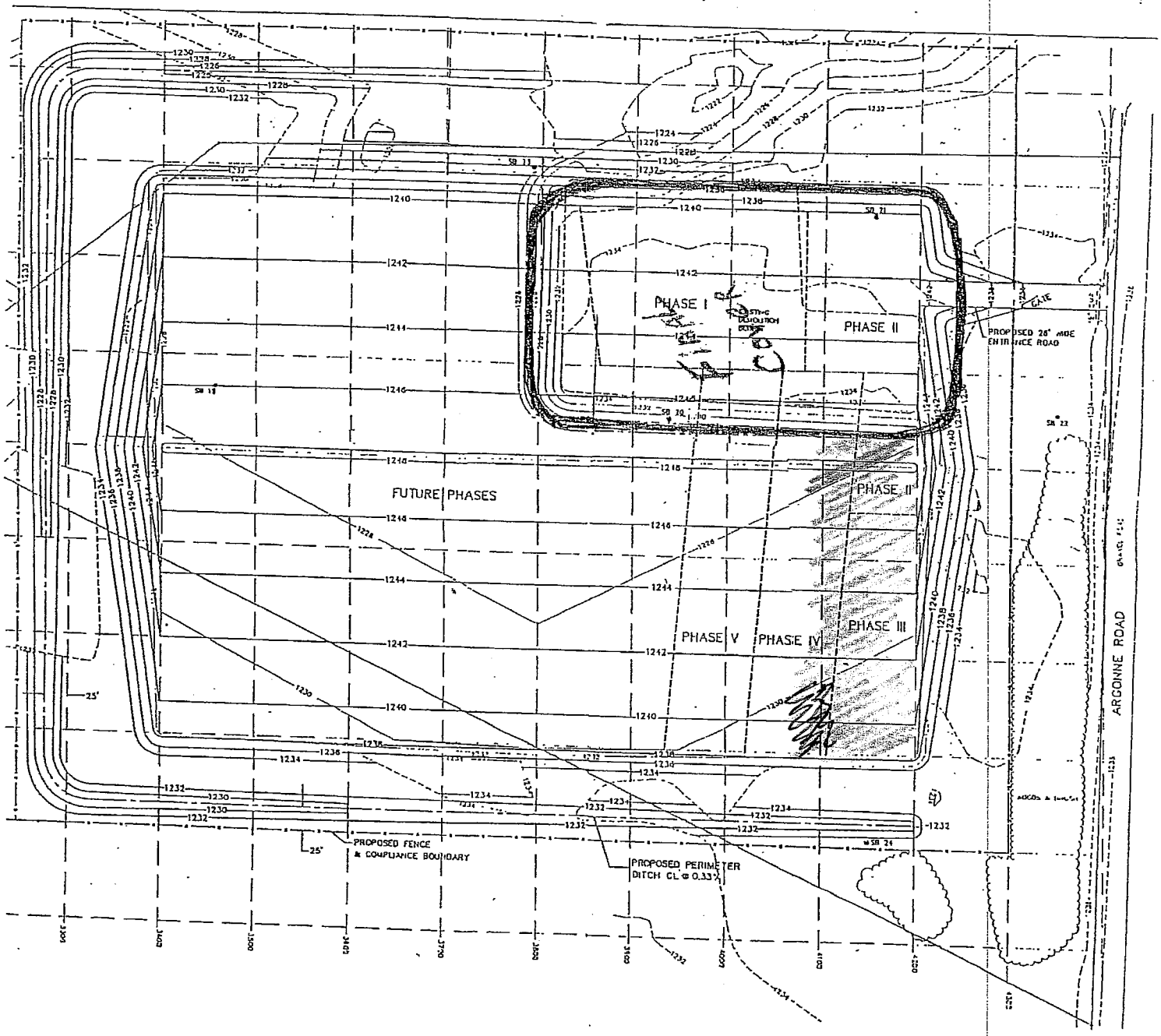
CAMP RIPLEY DEMOLITION DISPOSAL FACILITY

PERMIT NO. SW-359

2015
Dec

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
	14 Dec			4	Crates/Pallets	Transfer Station	JT
				1600 lbs			



0 25 50
SCALE=1"=50'

LEGEND

- EXISTING CONTOUR
- CPID LINE
- SURVEY CONTROL BOUNDARY
- SURVEY CONTROL MONUMENT
- TREE LINE
- PROPOSED FENCE & COMPLIANCE BOUNDARY
- MW 33 MONITORING WELL
- SB 18 SOIL BORING
- EXISTING DEBRIS BOUNDARY LINE
- PROPOSED PHASE BOUNDARY
- 1232 PROPOSED FINAL CONTOUR
- 1228 PROPOSED BASE CONTOUR

Unit

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 30 Nov 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 151 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

7. Remarks or comments: _____

8. Operator Name: Jesse Turner

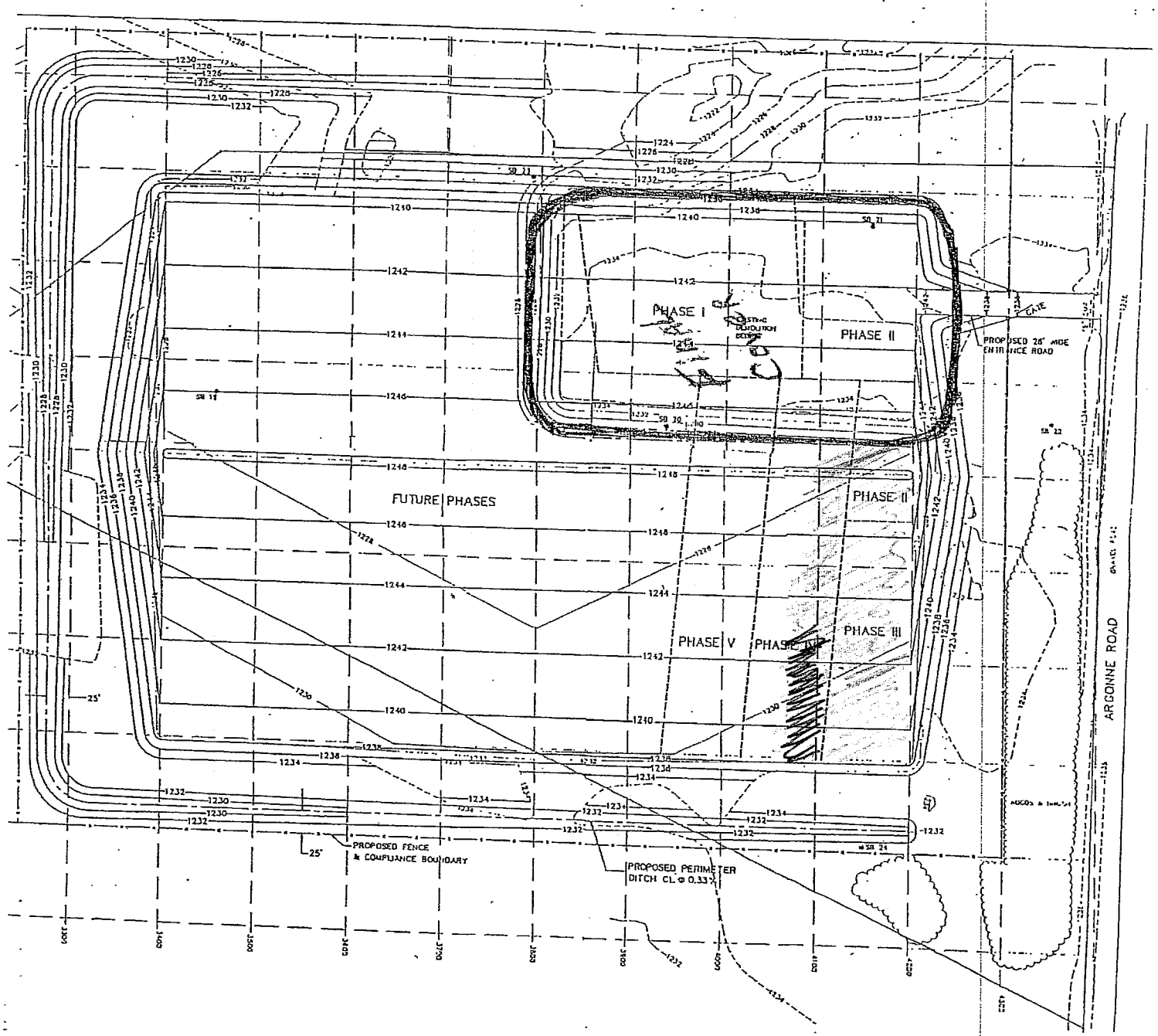
Signature: Jesse Turner

CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

2015
NOV

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
well inspect.	5NOV	0930	1530				JT
	5NOV			2	Wood Cabinet	transfer Station	JT
	9NOV			8	Pallets and Crates	transfer Station	JT
	12NOV			4	PALLETS	transfer STATION	JT
CMA North	16NOV	0800	0900	5	Pallets/Crates	CMA North	JT
Headley	16NOV	1000	1030	2	Shelving/Crates	AREA 1	JT
Polzin	20NOV	1140	1530	120	Wood/From Shingles Bldg.	AREA 3	JT
Beetson	24NOV	1230	1400	4	CRATES/PALLETS	CMA-5	JT
	24NOV	1445	1515	3	SHELVES	5+5	JT
	30NOV			3	BOARDS	transfer STATION	JT


PHASE I
EXISTING DEBRIS BOUNDARY
PHASE II
PROPOSED 26' WIDE ENTRANCE ROAD
FUTURE PHASES
PHASE II
PHASE V
PHASE IV
PHASE III
ARGONNE ROAD
PROPOSED FENCE & COMPLIANCE BOUNDARY
PROPOSED PERIMETER DITCH CL @ 0.33%
25'
SCALE-1"=50'
LEGEND
EXISTING CONTOUR
DMD LINE
SURVEY CONTROL BOUNDARY
SURVEY CONTROL MONUMENT
TREE LINE
PROPOSED FENCE & COMPLIANCE BOUNDARY
MONITORING WELL
SOIL BORING
EXISTING DEBRIS BOUNDARY LINE
PROPOSED PHASE BOUNDARY
PROPOSED FINAL CONTOUR
PROPOSED BASE CONTOUR

UMH

Erickson FMO

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 30 Oct 15
2. Area presently being filled (Phase No. from plans): 4
3. Intermediate cover used: 250 yd^3
4. Final cover used: 0 yd^3
5. Demolition debris received: 228 yd^3

   (See daily operational report for type of debris, material and source)

6. Results of inspection:

   - Uncontrolled vegetation removed: _____ Yes (or) X No
   - Soil erosion on slopes and completed areas: _____ Yes (or) X No
   - Rodents or burrowing animals: _____ Yes (or) X No
   - Settlement of completed areas: _____ Yes (or) X No
   - Surface water drainage problems: _____ Yes (or) X No
   - Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

7. Remarks or comments: _____

8. Operator Name: Jesse Turner

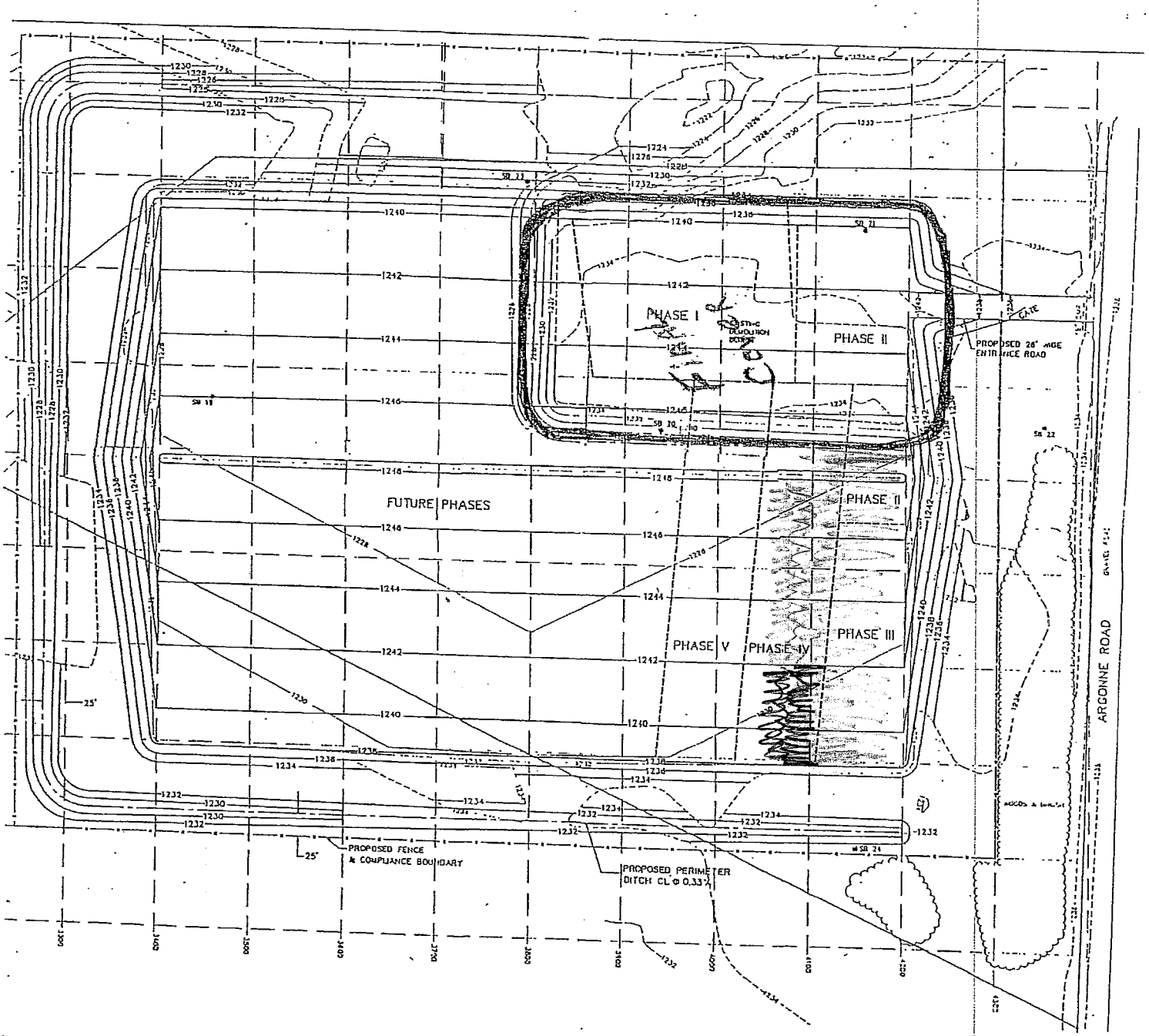
   Signature: Jesse Turner

CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

2015

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
	10 Oct			250	Dirt for Cover	Demo Dirt Pile	JT
Headley	20 Oct.					Clint Headley	TP
	3 Oct			80	Wood / metal	AREA 1	JT
	4 Oct			90	Roofing	AREA 1	JT
CMA-N	8 Oct	1330	1430	4	Wood Pallets / CRATES	CMA-N	JT
Roddy B.	15 Oct	1345	1430	4	Pallets	Rds	JT
Nyreen	20 Oct	7:45	8:30	1	Wooden Targets		tr
Flave	21 Oct	8:40	9:30	3	Pallets / wood	11-159	TP
[redacted]	22 OCT	12:00	15:00	8	Pallets	11-159	[redacted]
	23 Oct			5	Wood	TRANSFER STATION	[redacted]
	29 Oct	9:30	1530	25	PALLETS	11-159	[redacted]
Tilton	30 Oct	1400		8	Pallets / BOXES	CMA South	JT


PHASE I
EXISTING DEVELOPMENT BOUNDARY
PHASE II
PROPOSED 26' WIDE ENTRANCE ROAD
GATE
FUTURE PHASES
PHASE II
PHASE V
PHASE IV
PHASE III
ARGONNE ROAD
25'
25'
PROPOSED FENCE & COMPLIANCE BOUNDARY
PROPOSED PERIMETER DITCH CL @ 0.33%
SCALE-1"=50'
LEGEND
EXISTING CONTOUR
DRD LINE
SURVEY CONTROL BOUNDARY
SURVEY CONTROL MONUMENT
TREE LINE
PROPOSED FENCE & COMPLIANCE BOUNDARY
MONITORING WELL
SOIL BORING
EXISTING DEBRIS BOUNDARY LINE
PROPOSED PHASE BOUNDARY
PROPOSED FINAL CONTOUR
PROPOSED BASE CONTOUR

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 30 Sept 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 660 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 33 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

_____

_____

_____

7. Remarks or comments: _____

_____

8. Operator Name: Jesse Turner

Signature: Jesse Turner

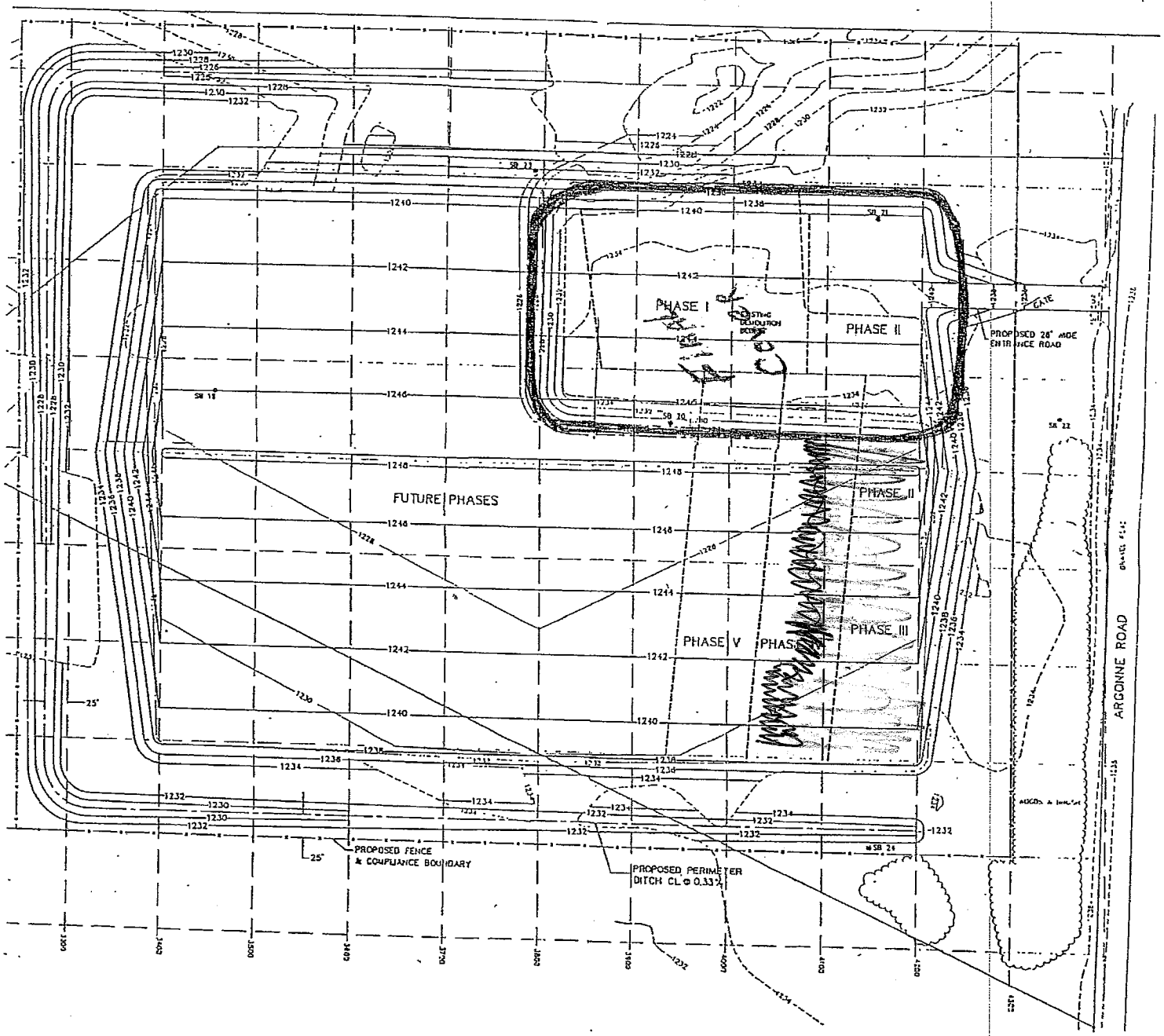
CMH

CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

Sept 2015

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
	10 Sept			4	Boards / Plywood	Transfer Station	JT
	16 Sept			3	Pallets	Transfer Station	JT
Brixous	16 Sept	1450	1600	5	Wood Crates	CMA-N	JT
USPFO	17 Sept	0730	0830	3	Pallets	USPFO	JT
	17 Sept			5	Boards / Plywood	AREA 1	JT
	17 Sept			160	Dirt For Cover	Airfield	JT
	18 Sept			200	Dirt for Cover	airfield	JT
	24 Sept			300	Dirt for Cover	Demo Dirt Pile	JT
	28 Sept			6	Plywood	ATS	J.T.
	28 Sept			6	Plywood / CRATES	DoL WHSE	JT
	28 Sept			1	CRATE	Housing	JT
				33			
				*400			
				13,200			



LEGEND

- EXISTING CONTOUR
- GRID LINE
- SURVEY CONTROL BOUNDARY
- SURVEY CONTROL MONUMENT
- TREE LINE
- PROPOSED FENCE & COMPLIANCE BOUNDARY
- MW 33 MONITORING WELL
- SB 18 SOIL BORING
- EXISTING DEBRIS BOUNDARY LINE
- PROPOSED PHASE BOUNDARY
- 1232 PROPOSED FINAL CONTOUR
- 1228 PROPOSED BASE CONTOUR

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 31 Aug 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 18 yd^3

   (See daily operational report for type of debris, material and source)

6. Results of inspection:

   - Uncontrolled vegetation removed: _____ Yes (or) X No
   - Soil erosion on slopes and completed areas: _____ Yes (or) X No
   - Rodents or burrowing animals: _____ Yes (or) X No
   - Settlement of completed areas: _____ Yes (or) X No
   - Surface water drainage problems: _____ Yes (or) X No
   - Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

7. Remarks or comments: _____

8. Operator Name: Jesse Turner

   Signature: Jesse Turner

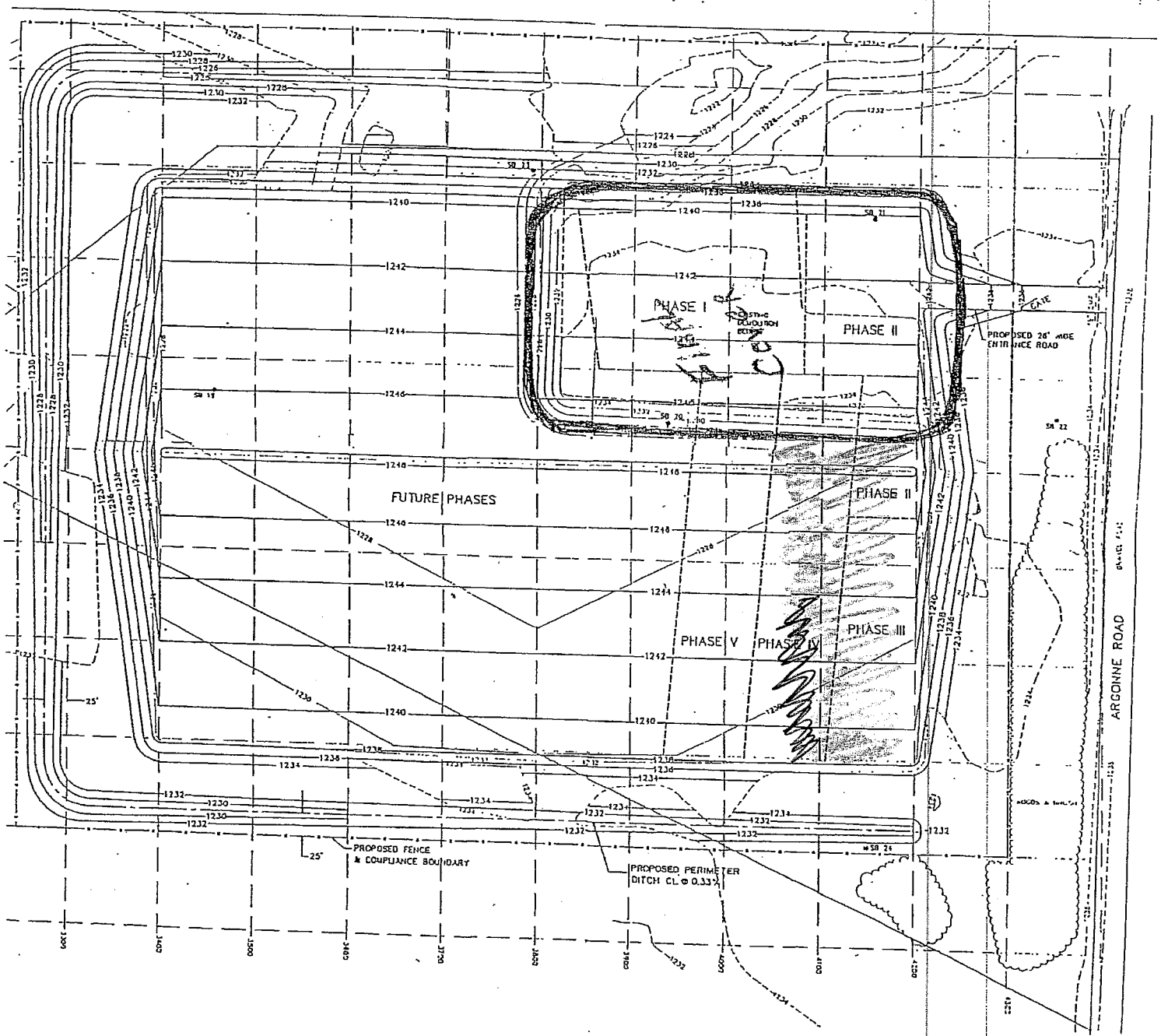
Utah

CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

Aug 2015

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
	11 Aug			4	Board / Pallets	Transfer	JT
ATS	13 Aug	0800	1100	5	Plywood	ATS	JT
	17 Aug			4	Plywood / Pallets	Transfer	JT
	31 Aug			5	Pallets / Plywood	Transfer	JT
				18			
				7,200			


PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V
PHASE VI
FUTURE PHASES
PROPOSED 26' WIDE ENTRANCE ROAD
ARGONNE ROAD
PROPOSED FENCE & COMPLIANCE BOUNDARY
PROPOSED PERIMETER DITCH CL @ 0.33%
25'
SCALE-1"=50'
LEGEND
EXISTING CONTOUR
GRID LINE
SURVEY CONTROL BOUNDARY
SURVEY CONTROL MONUMENT
TREE LINE
PROPOSED FENCE & COMPLIANCE BOUNDARY
MONITORING WELL
SOIL BORING
EXISTING DEBRIS BOUNDARY LINE
PROPOSED PHASE BOUNDARY
PROPOSED FINAL CONTOUR
PROPOSED BASE CONTOUR

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 31 July 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 46 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

7. Remarks or comments: Grounds Dept mowed grass on Final Cover Area

8. Operator Name: Jesse Turner

Signature: Jesse Turner

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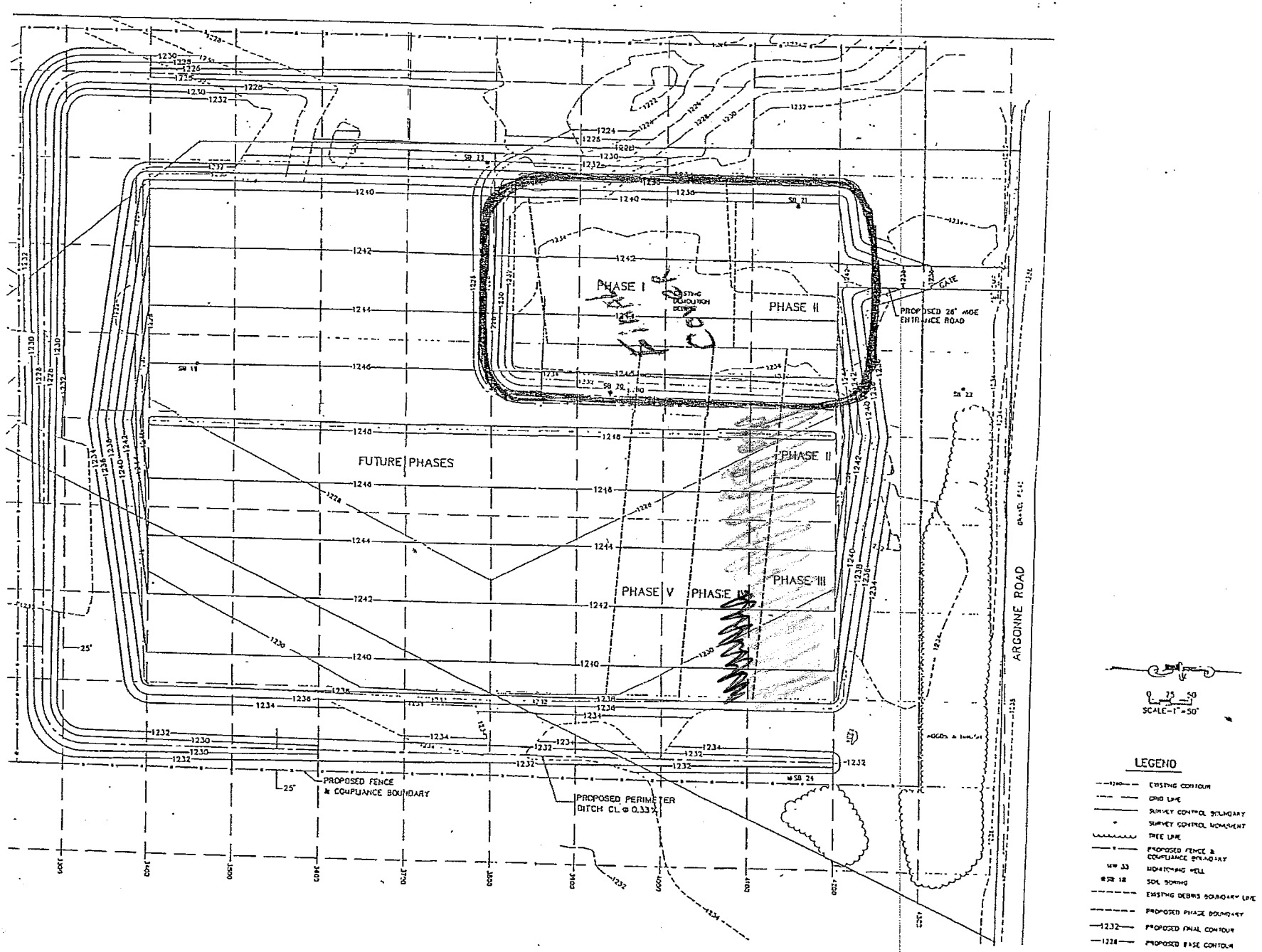
CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

July 2015

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
ATS	14 July	1230	1430	12	Wood	ATS	JT
	14 July	1430	1530	10	Wood	S+S	JT
	16 July	0800	1100	4	Latrine	R&S	JT
	21 JuL	1500	1530	3	WOOD	transfer STATION	dus
ATS	21 JuL	1300	1400	3	Wood Plywood	ATS	dus
Marget	27 July	0830	0915	3	Boxes	CMA	JT
Holewa	27 July	0900	1000	5	Shingles	A-Range	JT
Quinn ATS	27-JUL 15	12:40	1:10	2	wood targets DRYWALL		SP
ATS	28 July	1330	1430	4	Plywood	ATS	JT
				46			
				18,400			


PHASE I
PHASE II
PHASE II
PHASE III
PHASE IV
PHASE V
FUTURE PHASES
PROPOSED 26' WIDE ENTRANCE ROAD
ARGONNE ROAD
PROPOSED FENCE & COMPLIANCE BOUNDARY
PROPOSED PERIMETER DITCH CL @ 0.33%
SCALE-1"=50'
LEGEND
EXISTING CONTOUR
GRID LINE
SURVEY CONTROL BOUNDARY
SURVEY CONTROL MONUMENT
TREE LINE
PROPOSED FENCE & COMPLIANCE BOUNDARY
MONITORING WELL
SOIL BORING
EXISTING DEBRIS BOUNDARY LINE
PROPOSED PHASE BOUNDARY
PROPOSED FINAL CONTOUR
PROPOSED BASE CONTOUR

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 30 June 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 22 yd^3

   (See daily operational report for type of debris, material and source)

6. Results of inspection:

   - Uncontrolled vegetation removed: _____ Yes (or) X No
   - Soil erosion on slopes and completed areas: _____ Yes (or) X No
   - Rodents or burrowing animals: _____ Yes (or) X No
   - Settlement of completed areas: _____ Yes (or) X No
   - Surface water drainage problems: _____ Yes (or) X No
   - Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

_____

_____

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7. Remarks or comments: _____

_____

8. Operator Name: Jesse Turner

   Signature: Jesse Turner

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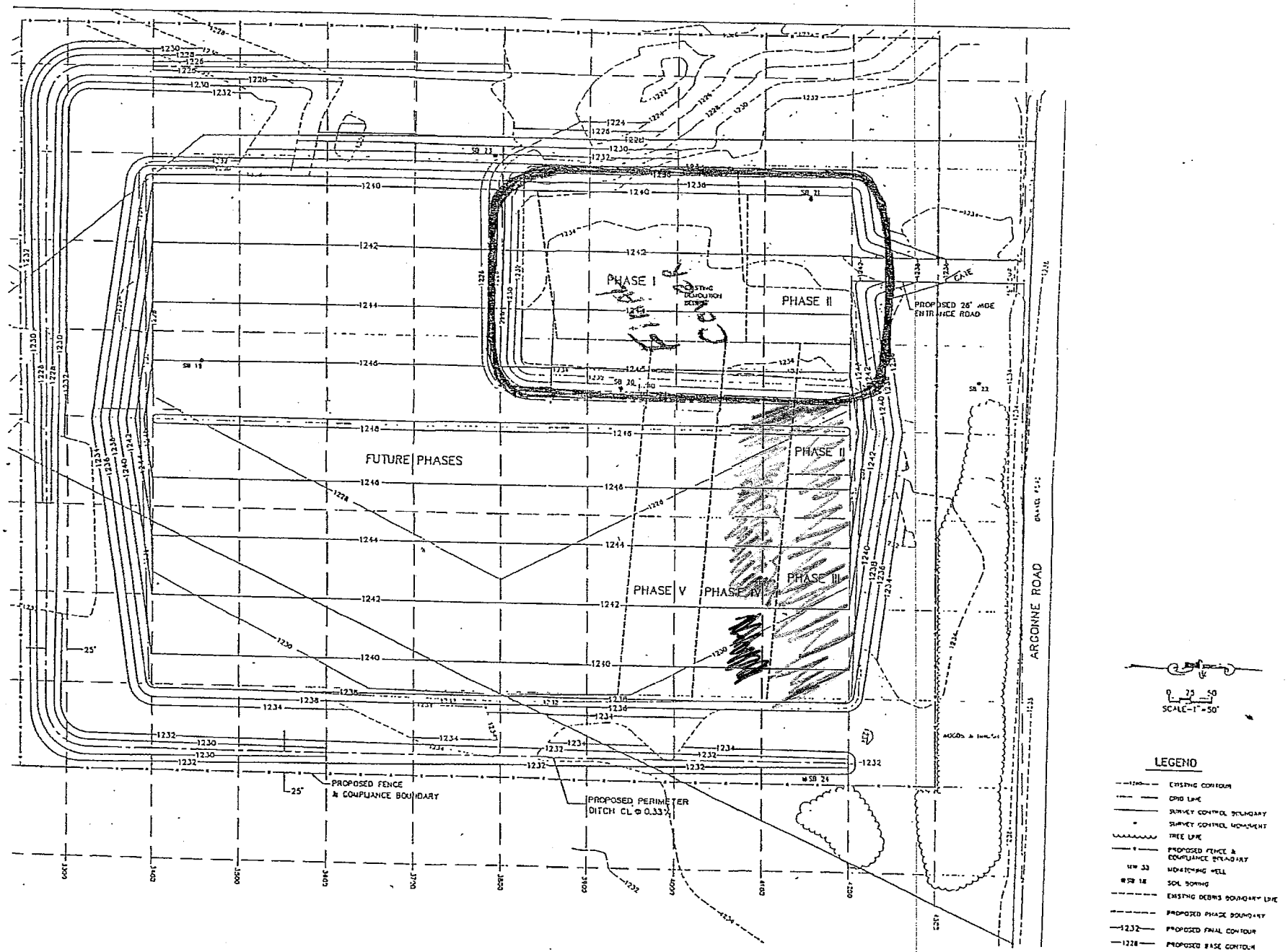
CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

2015

DAILY OPERATIONAL REPORT

	Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
1200		06/05/2015	7:30	8:50	3 yds	TARGETS "Plywood"	Terry Aiken	TV
1200		6-09-15	/	/	3 yds	Plywood - pallets	Transfer station	TP
1200		10 June	0800	0900	3 yds	Plywood	ATS	JT
2000		17 June			5 yds	mixed wood	Transfer Station	JT
1600	OELSON	19 June	0900	0930	4 yds	Boxes	CMA	JT
1600	Bahmann	June 25	0830	0900	4 yds	Boxes/Pallets	CMA	JT


PHASE I
EXISTING DEMOLITION DEBRIS
PHASE II
PROPOSED 26' MOE ENTRANCE ROAD
FUTURE PHASES
PHASE II
PHASE V
PHASE IV
PHASE III
ARGONNE ROAD
PROPOSED FENCE & COMPLIANCE BOUNDARY
PROPOSED PERIMETER DITCH CL @ 0.33%
25'
SCALE-1"=50'
LEGEND
EXISTING CONTOUR
GRID LINE
SURVEY CONTROL BOUNDARY
SURVEY CONTROL MONUMENT
TREE LINE
PROPOSED FENCE & COMPLIANCE BOUNDARY
MONITORING WELL
SOIL BORING
EXISTING DEBRIS BOUNDARY LINE
PROPOSED PHASE BOUNDARY
PROPOSED FINAL CONTOUR
PROPOSED BASE CONTOUR

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 29 MAY 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 32 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

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7. Remarks or comments: _____

_____

8. Operator Name: Jesse Turner

Signature: Jesse Turner

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CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

2015

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
Helmerick	4MAY	0730	1030	2	wood And Tin	Rds+Rks	JT
Radar	5MAY	1000	1500		work on Dozer		JT
	11MAY			5	wood	Y-2	JT
Pink	13MAY	0815	0900	3	wood	AREA 23	JT
Czech	14MAY	1300	1400	3	wood	ATS	JT
Baley	21MAY	0930	1000	4	wood	45PFO	JT
Paycen	21MAY	1030	1130	4	wood	MATES	JT
	26MAY	1300	1400	4	wood	45PFO	JT
	27MAY	1000	1100	4	wood	S+S	JT
	28MAY	1010		3	wood	ATS	JT

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 30 APR 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 8 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

_____

_____

_____

7. Remarks or comments: _____

_____

8. Operator Name: Jesse Turner

Signature: Jesse Turner

Unit

CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

2015
APRIL

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
Hulett	21APR	0930	1100	3	Pallets and crates	CMA South	
Fuse	4/22	10:30	12:00	5	scrap wood	metal	
[illegible]							

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 31 MAR 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 8 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

7. Remarks or comments: _____

8. Operator Name: Jesse Turner

Signature: Jesse Turner

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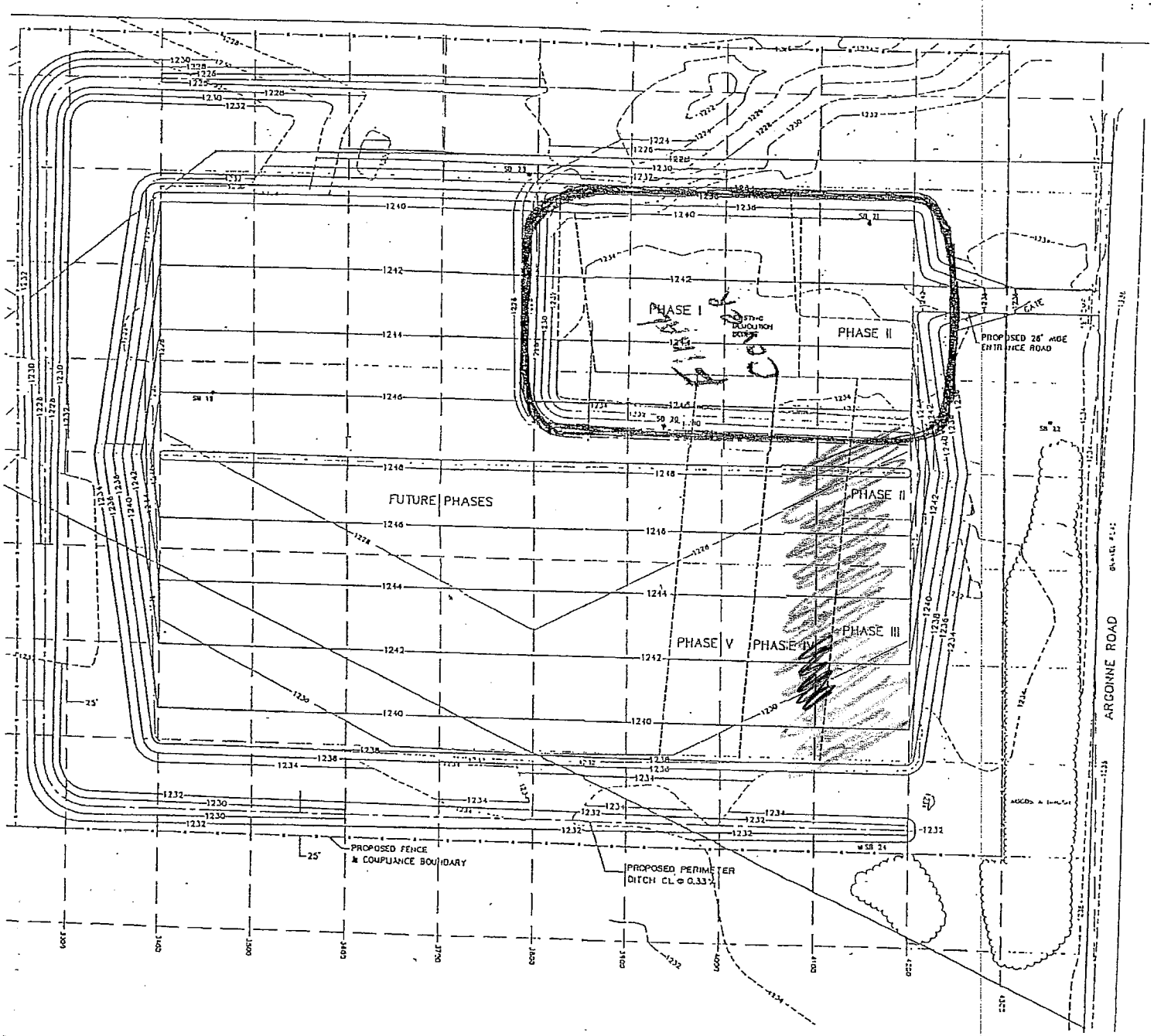
2015
MAR

CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
MARSHIK	24 MAR	0900	1000	3	Wood	CMA-5	JT
	25 MAR			5	Wood	Transfer Station	JT


PHASE I
PHASE II
PHASE II
PHASE III
PHASE IV
PHASE V
FUTURE PHASES
PROPOSED 28' WIDE ENTRANCE ROAD
GATE
ARGONNE ROAD
PROPOSED FENCE & COMPLIANCE BOUNDARY
PROPOSED PERIMETER DITCH CL @ 0.33%
25'
SCALE-1"=50'
LEGEND
EXISTING CONTOUR
SURVEY CONTROL MONUMENT
TREE LINE
PROPOSED FENCE & COMPLIANCE BOUNDARY
MONITORING WELL
SOIL BORING
EXISTING DEBRIS BOUNDARY LINE
PROPOSED PHASE BOUNDARY
PROPOSED FINAL CONTOUR
PROPOSED BASE CONTOUR

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 27 FEB 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 5 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

7. Remarks or comments: _____

8. Operator Name: Jesse Turner

Signature: Jesse Turner

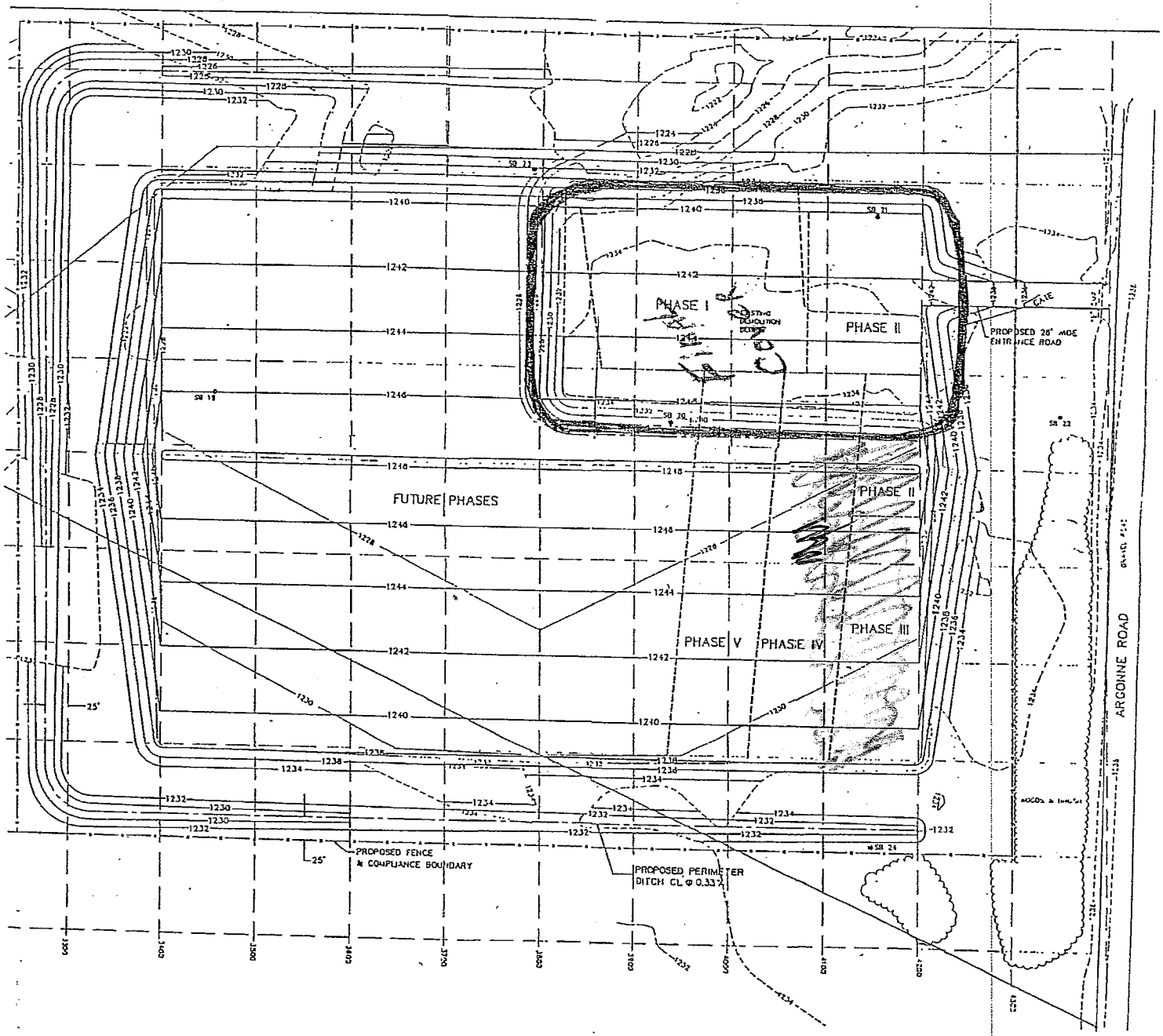
UNIT

CAMP RIPLEY DEMOLITION DISPOSAL FACILITY
PERMIT NO. SW-359

FEB 2015

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
	2/09			5.	wood / sheetrock	Carpenters	JP



0 25 50
SCALE-1"=50'

LEGEND

- EXISTING CONTOUR
- GRID LINE
- SURVEY CONTROL BOUNDARY
- SURVEY CONTROL MONUMENT
- TREE LINE
- PROPOSED FENCE & COMPLIANCE BOUNDARY
- MW 33 MONITORING WELL
- SB 18 SOIL BORING
- EXISTING DEBRIS BOUNDARY LINE
- PROPOSED PHASE BOUNDARY
- 1232 PROPOSED FINAL CONTOUR
- 1228 PROPOSED BASE CONTOUR

CAMP RIPLEY DEMOLITION DEBRIS DISPOSAL FACILITY

PERMIT NO. SW-359

MONTHLY INSPECTION REPORT

1. Date Inspected: 30 JAN 15

2. Area presently being filled (Phase No. from plans): 4

3. Intermediate cover used: 0 yd^3

4. Final cover used: 0 yd^3

5. Demolition debris received: 64 yd^3

(See daily operational report for type of debris, material and source)

6. Results of inspection:

- Uncontrolled vegetation removed: _____ Yes (or) X No
- Soil erosion on slopes and completed areas: _____ Yes (or) X No
- Rodents or burrowing animals: _____ Yes (or) X No
- Settlement of completed areas: _____ Yes (or) X No
- Surface water drainage problems: _____ Yes (or) X No
- Emergency or corrective actions: _____ Yes (or) X No

Explain "Yes" responses: _____

7. Remarks or comments: _____

8. Operator Name: Jesse Turner

Signature: Jesse Turner

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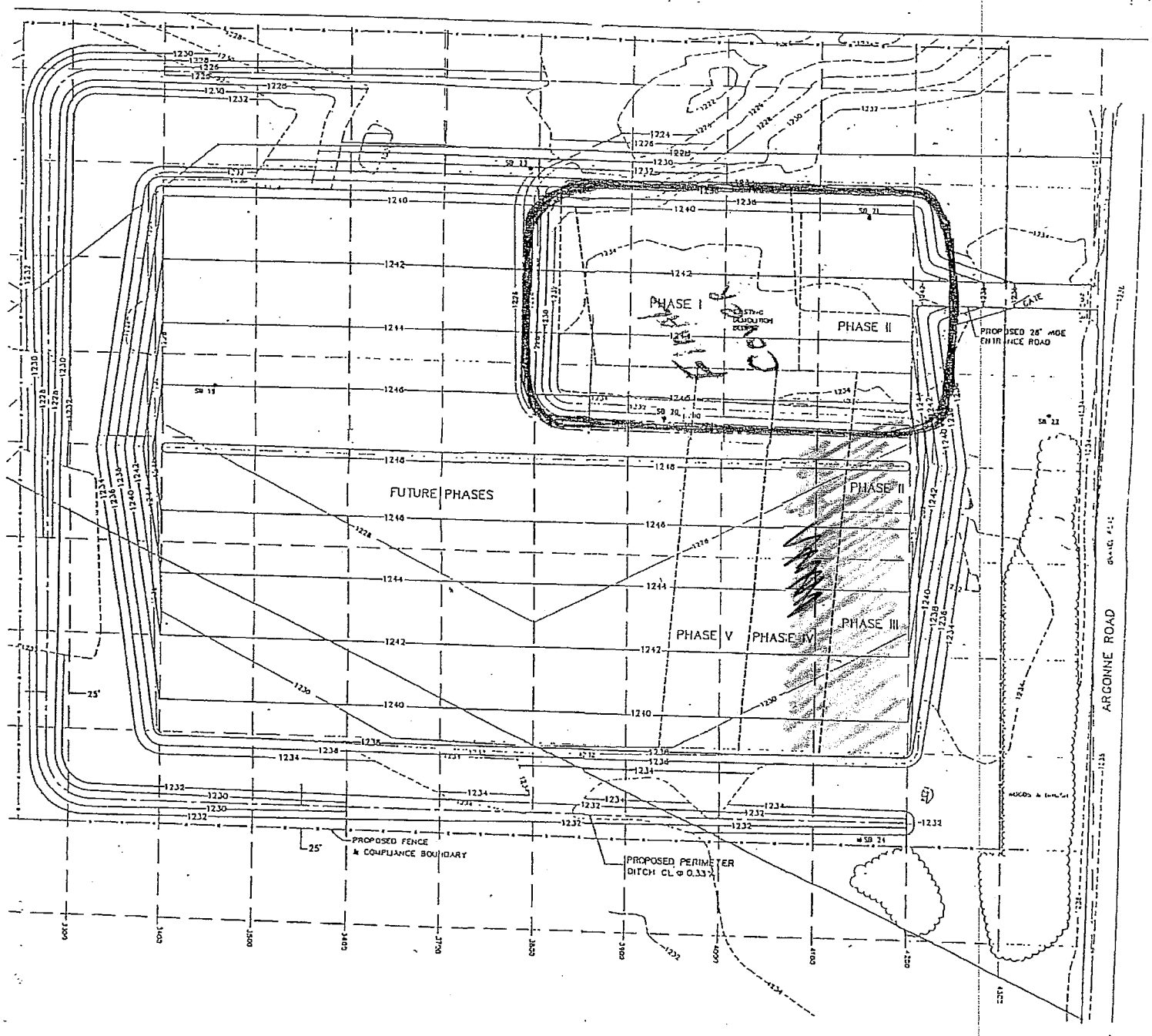
CAMP RIPLEY DEMOLITION DISPOSAL FACILITY

PERMIT NO. SW-359

JAN 2015

DAILY OPERATIONAL REPORT

Key	Date	Time Out	Time In	Estimated Cubic Yards	Type of Debris Material	Source	Operator's Initials
Bailey	16JAN	0900	0945	4	wood	USP&O	JT
	27JAN			25	wood	AREA 5	JT
	28JAN			25	wood	AREA 5	JT
	29JAN			10	wood	Bridge Site	JT


PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V
FUTURE PHASES
PROPOSED 26' MOE ENTRANCE ROAD
ARGONNE ROAD
PROPOSED FENCE & COMPLIANCE BOUNDARY
PROPOSED PERIMETER DITCH CL @ 0.33%
25'
SCALE-1"=50'
LEGEND
EXISTING CONTOUR
SURVEY CONTROL MONUMENT
TREE LINE
PROPOSED FENCE & COMPLIANCE BOUNDARY
MONITORING WELL
SOIL BORING
PROPOSED PHASE BOUNDARY
PROPOSED FINAL CONTOUR
PROPOSED BASE CONTOUR