SITE INSPECTION REPORT

DRYDEN LANDFILL

Dryden, Chelan County, Washington

WAD980638985

1988

Hazardous Waste Cleanup Program

PRELIMINARY ASSESSMENT / SITE INSPECTION UNIT

State of Washington

Booth Gardner

Governor

Department of Ecology

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Director

PHASE I AND II SITE INSPECTION REPORT

CHELAN COUNTY DRYDEN LANDFILL
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March 1988

Report Prepared by:

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Preliminary Assessment/Site Inspection Unit
Hazardous Waste Cleanup Program

SITE NAME/ADDRESS

Chelan County Dryden Landfill
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Dryden, WA 98801

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DATE OF PHASE I SITE INSPECTION

June 9, 1987

DATE OF PHASE II SITE INSPECTION

November 18, 1987

INTRODUCTION

The Chelan County Dryden Landfill site, Chelan, Washington (hereinafter referred to as site), has been identified by the U.S. Environmental Protection Agency (EPA) Region X and the Washington State Department of Ecology (Ecology) as requiring additional information to accurately profile the nature and extent of past waste disposal activities.

The Potential Hazardous Waste Site Preliminary Assessment (PA) of September 27, 1985 recommended that a Site Inspection (SI) be performed to sample local ground and surface waters to determine if any contamination by priority pollutants has occurred due to past disposal practices on-site.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) maintains the original goal of an SI: the step in the site evaluation process during which field investigators collect the data necessary to support an EPA decision as to whether to place a site on the list of those that pose the most serious threats to public health and the environment and that appear to warrant remedial action (i.e., the National Priorities List (NPL)). SIs will continue to be designed as limited, essentially one-time sampling events; they will not become extent-of-contamination studies or full-scale risk assessments.

The subsequent inspection, carried out under the Superfund Multi-Site Cooperative Agreement PA/SI Program, is described in this report, along with further recommendations, under the following sections:

1.0 SITE OWNER/OPERATOR

The Dryden Landfill is owned and operated by Chelan County Department of Public Works.

2.0 SITE HISTORY AND BACKGROUND

Analysis by EPA of early aerial photographs show much of the site property, prior to any landfill activities in 1949, taken up by orchards and two residences. A further photograph in August of 1963 shows one of the orchards removed, and the other reduced in size, with no visible signs of waste disposal activities. However the Dryden Landfill Closure Plan by CH2M Hill, and Sweet, Edwards & Associates, states that municipal refuse, agricultural wastes and other wastes were deposited on-site since 1960.

An inspection of the landfill in April of 1961 by the Chelan-Douglas Health District (CDHD) and the state Department of Health described current operations occurring as "a shallow trench approximately 100 feet east of the west edge of the site running roughly north and south. This trench was about 100 feet long and partly filled with rubbish. The situation for the eastern half of the disposal site was hardly describable. The river side (north and northeast faces) was open with garbage and refuse on the northeast corner. There was a long partially covered area about 20 feet wide extending along the north edge of the fill which rose about 10 feet above the top of the old fill. Just south of this was a series of excavations apparently for cover material. The northeastern corner had open refuse and garbage from trucks dumped that day. There was a low channel cutting off the north and northeastern edge of the fill from the solid ground to the south."

It was felt that a rise in the river level of 10-15 feet would expose all of the fill in the northern edge to erosion and probable washing downstream.

Recommendations were made that all refuse and garbage be deposited in trenches, covered at least daily, and the present northern edge be extended to the west to cut off the by-pass channel. Also, that refuse and garbage in the northern and north-eastern area be compacted and thoroughly covered, including the river face. (Riprapping or other methods might be used to prevent erosion of this face.)

An aerial photograph from September 1971 revealed waste disposal activities over only a fraction of the area covered by the present day landfill perimeter. There was a large major body of the landfill, with a smaller accumulation of possible solid waste to the north. A general plan of operation, dated March 28, 1974 stated that, "the landfill method will be an area method with spreading and compacting in four foot final lifts. The working area will be approximately 12 feet wide and 50 feet long for each day. The slope of the working face will be 3 to 1. Filling shall occur from the east end and proceed to the west end. Existing canals on the uphill

face to the south will be used to divert and control surface runoff that would otherwise enter the working area.

The contour and slope of the landfill will be maintained nearly level. The final cover will be two feet of top soil. It shall slope gradually from the east to the west. The slope will not exceed 5%. It will be seeded with a suitable dry-land grass. The site will be kept as an open space and not oriented to support any facilities or development that will require maintenance."

A photograph dated August 1975 shows only a slight increase in the size of the landfill compared to 1971. The area of solid waste that was separate from the main landfill in the 1971 photograph was no longer visible.

On-site inspections were made by Ecology Central Regional Office (ECRO) in mid-August 1980, initially as part of the Federal Resource Conservation and Recovery Act (RCRA) of 1976 Open Dump Inventory (ODI). An evaluation was made of the facility using criteria published by the EPA, September 13, 1979 in the Federal Register, 40 CFR Part 257. Sections 4004 and 1008 of RCRA authorized EPA to publish these criteria, which provide minimum national standards for the protection of health and the environment from adverse effects resulting from inadequate solid waste disposal. Those facilities that are evaluated and found not to comply (by failing to meet any one or more of the criteria) were to be reported to the EPA and annually published in the ODI as required by Section 4005 of RCRA.

The ODI inspection, on August 13, 1980, resulted in a determination of non-compliance in terms of ground water criteria due to observations of leachate, apparently from the landfill, entering the Wenatchee River. A second inspection about a week later was to follow up on a complaint made to ECRO, via the CDHD, of leachate, again apparently from the landfill, entering the Wenatchee River. The ensuing and other related actions, as available from the PA and ECRO files, can be summarized as:

<u>August 20, 1980</u>
Ban on septage importation by CDHD.

<u>August 28, 1980</u>
Conclusion by ECRO that spring discharges along Wenatchee River at base of the landfill are comprised of naturally occurring ground waters that migrate through the landfill and of the liquid fraction of the septage that had been deposited at the landfill.

<u>October 3, 1980</u>
Notice of Violation concerning leachate problem at landfill (discharge of leachate from property into public waters of state) issued by ECRO to Chelan County. Response to Ecology a week later.

<u>December 10, 1980</u>
Regulatory Order issued by Ecology (see in full in Appendix B) to correct leachate problem, with monthly sampling program prescribed.

Implementation to be not later than December 30, 1980 for leachate monitoring and collection.

December 29, 1980
ODI notification letter of non-compliance sent to Chelan County by ECRO.

January 1, 1981
Dryden Landfill published on federal Open Dump List.

April 1, 1981
On-site ground water monitoring well in a dry state, not properly located? Leachate flow into Wenatchee River still occurring. Recommendations made to relocate well, or install new one, and collect and analyze leachate.

June 1981
Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) 103c Notification of Hazardous Waste Site form filed by Dependable Disposal Co., Inc. for Dryden Landfill, with disclaimer. This stated that the Dryden Landfill was a facility to which the company has at any time transported for disposal material(s) that could have included material now defined as hazardous waste by EPA.

June 1, 1981
Dryden Landfill placed on EPA CERLIS List of potential hazardous waste sites.

June 1981
On-site monitoring well sampled for first time, metals concentrations low (except for iron), no organophosphates detected, chlorinated hydrocarbons at 0.075 ug/l (detection limit not reported).

May 1982
ECRO acknowledges Chelan County's well water sample collection/analyses for period June 9-November 11, 1981, with resumption April, 1982. Water quality parameters of fecal coliform and NH^4 exceeded standards, and monitoring requirements specified in items 4a through 4m in the December 1980 Order were not met (priority pollutants). These conditions must be immediately and fully implemented.

May 3, 1982
Comprehensive Solid Waste Management Plan for Chelan and Douglas counties adopted by Chelan County. The current landfill site at Dryden would be closed and replaced by a solid waste transfer station. The basic activities related to the closure would be proper cover application and ground water monitoring. As a minimum, Chapter 173-304 WAC, Minimum Functional Standards for Solid Waste Handling, were adopted. Major construction work on the transfer station was to commence in mid-Summer 1985.

June 1982
EPA/Ecology and Environment, Inc. SI. Recommended priority pollutant scan on leachate seeps.

September 1983
On-site well and leachate seep sampled and priority pollutant scan run. Refer to Section 6 and Table 1 for discussion of results.

October 1983
96-hour bioassay results for water samples from the on-site monitoring well and the leachate showed zero mortality at 1,000 ppm.

October 1984
ECRO correspondence to Chelan County that:

- o interceptor trench to collect uncontaminated subsurface water and transport to Wenatchee River was not known to be completed.
- o ground water monitoring well was not constructed in a manner that allowed for representative sampling.
- o requested monthly sampling lacks consistency, e.g., for chlorinated hydrocarbon residues, organophosphates residues, metals, etc.

The County was reminded that in order to pursue an acceptable closure plan for the Dryden Landfill, and in order to pursue the construction of the proposed transfer station involving Ecology grant funding, it was imperative that the leachate problem be quantified and that a leachate monitoring program be established. Without the implementation of an appropriate program, no conclusions can be drawn as to alternatives to reduce or eliminate the loss of leachate from the Dryden Landfill.

October 1984
Citizen complaint to ECRO of leachate being discharged into the Wenatchee River at base of landfill (southeast end). Analysis of leachate showed elevated levels only for manganese and iron.

June 1985
Ecology prepared PA which recommended ground water monitoring in upgradient and downgradient wells, to include full priority pollutant scan analyses.

August 1986
Dryden Landfill Closure Plan prepared by CH2M Hill, and Sweet, Edwards and Associates, for Chelan County Department of Public Works.

June 9, 1987
Ecology Phase I Site Inspection.

November 18, 1987
Ecology Phase II Site Inspection.

3.0 ENVIRONMENTAL SETTING

The Dryden Landfill sits above, and west of the Wenatchee River where State Highway 2 crosses the river about 15 miles northwest of Wenatchee. The site covers approximately 20 acres, with about nine acres used for waste disposal activities. Depths of buried waste range up to 70 feet. This location is within the northwest quarter and southwest quarter of Section 27, Township 24 North, Range 18 East, Willamette

Meridian, at a latitude of 47°32'45" North and a longitude of 120°34'25" West (Leavenworth quad. topo.).

3.1 Climate

The main ridge of the Cascade Mountains forms a north-south climate and topographic barrier across the State of Washington, approximately 30 miles west of the City of Wenatchee (Dryden lies about 15 miles northwest of Wenatchee). The summit of this ridge of mountains ranges from 5,000-8,000 feet. The prevailing direction of the wind above the summit is westerly throughout the year. (West of the Cascades, the direction of the surface wind varies from the southwest in the fall and to northwest in the summer.)

There is a southwesterly flow of warm, moist air from over the Pacific Ocean into western Washington during the fall and winter. This moist air cools and condensation occurs as it rises along the western slope of the Cascades, producing heavy precipitation along the slope and near the summit. The air becomes warmer and drier as it flows down to the lee side of the Cascades into the Wenatchee and the Columbia River valleys. As a result of this process, the annual precipitation decreases from between 75 to 90 inches at the summit of the Cascades to 23 inches at Leavenworth (elevation 1160 feet) and 9 inches at Wenatchee (elevation 634 feet). This rapid decrease in precipitation occurs within a distance of approximately 50 miles east of the summit of the Cascades. Snowfall during the winter season ranges from 30 to 35 inches in the vicinity of Wenatchee to 100 inches at Leavenworth and 350 inches at Stevens Pass.

The prevailing westerly flow of air over the Cascade Mountains results in a drier and more mild climate than is usually experienced at this latitude. Mean daily temperatures range from around 25°F in January to 70°F in August. Monthly precipitation ranges from about seven inches in December to 0.5 inches in August. Annual precipitation is 17 inches, with mean lake evaporation at 34 inches per year. Mean actual annual evapotranspiration is around 12 inches. The 2-year 24-hour precipitation is 1.5 inches.

3.2 Geology/Hydrology

There are four types of geological formations in Chelan County. In the southeastern portion, the area is underlaid with dark gray to black dense aphanitic basaltic rock. In the central portion and around Lake Chelan, the area is underlaid with granitic rock containing granite and quartz. In the Entiat Valley and Wenatchee Valley areas, and around the eastern portion of Lake Wenatchee, the land is underlaid with alluvial deposits and glacial drifts containing sand, gravel, silt and clay. Around the foothills of the Columbia River and the lower drainage area of the Wenatchee River, the land is surrounded by Swauk bedrock formations.

The site geology has been influenced by local landslide events. Recent borings for installation of on-site monitoring wells indicated the presence of a large landslide structure. Generalized cross sections of the landfill vicinity show the landfill deposits are underlain by recent alluvial sand and gravelly sand deposits. The landslide deposits generally consist of weathered sandstone and siltstone with interbeds of shale and coal. The thickness of landslide materials ranges from at least 42 feet to possibly over 174 feet.

Recent alluvial deposits encountered in two of the monitoring wells consisted primarily of fine and coarse sand, with varying amounts of gravel. The maximum thickness of these deposits is unknown. On-site soil data from drilled wells indicate 15 inches of silt loam over a clay loam disintegrating into sandstone to a depth of 20 feet or more. Generally, a layer, at least 60 feet thick, of sandstone underlays the site.

The major domestic water supply source is from surface streams, rivers and lakes. Some domestic water is provided from wells. Ground water appears to be available in significant quantities only in the immediate vicinity of streams and rivers where sufficient alluvium has been deposited. The remaining land is generally steep and rocky with frequent outcroppings of bedrock which generally precludes ground water storage.

Two hydrogeologic units are identified beneath the landfill site: a deep water table aquifer and localized perched water. A continuous water table aquifer is present in the alluvial deposits, landslide deposits, and bedrock with saturated conditions occurring at least 120 feet below the existing landfill surface. Perched ground water (i.e., leachate) was reported in the in-waste monitoring well prior to 1984. In addition, localized perched ground water was encountered in recent drilled monitoring wells to the northwest of the waste disposal area.

The water table aquifer beneath the landfill, an important hydrogeologic unit in the Wenatchee River Valley, generally consists of alluvial sand and gravel deposits and bedrock deposits. Water level measurements indicate that ground water flows in a south to southeastern direction. The water table appears to be continuous beneath the site and in hydraulic connection with the Wenatchee River. The aquifer is most likely being recharged by the Wenatchee River. (The saturated thickness of the water table aquifer is unknown.) Likely sources of recharge (i.e., ground water inflow) to the waste disposal area in the past have included leakage from the Peshastin Irrigation District canal located to the south of the landfill, and infiltration of precipitation. Review of streamflow records for the Wenatchee River shows that the maximum elevation of the river is at least 40 feet below the bottom of the waste disposal area, therefore, recharge from the Wenatchee River is not possible.

3.3 Topography and Drainage

Mountain ranges divide Chelan County into three major drainage areas centering around the Wenatchee River, the Entiat River, and the Stehikin River including Lake Chelan. Each of the drainage areas contains a number of canyons; some having a high flash flood potential. All surface runoff eventually finds its way to the Columbia River.

The topography of the general area surrounding the landfill site consists of low-lying hills and valleys which form localized side slopes and tributaries for the Wenatchee River. The regional geomorphology is influenced primarily by the Wenatchee River which formed a broad alluvial valley in the Dryden area. Bedrock in the area is the Swauk Formation, an arkosic sandstone of fluvial origin which dips steeply under the valley. Bedrock approaches the ground surface near the valley side slopes.

A review of original topographic mapping for the site indicates that the waste disposal area is centered in a natural topographic low area which included two undrained depressions (or large potholes). The original ground elevations of the depressions are estimated to be 997 and 987 feet MSL, which are about 68 to 70 feet below the present elevation of the landfill surface.

Most of the wastes placed in the landfill have been covered with weathered sandstone-type cover soils. The waste disposal area generally ranges in thickness from 10 to 50 feet, except in the two depression areas. The landfill itself sits atop a bluff approximately 130 feet above the average river level.

The Peshastin Irrigation District canal runs for approximately 800 to 1,000 feet along the southern edge of the landfill site. The open canal is cut into native soils and is approximately three feet in depth and six feet wide. The elevation of the canal ranges from about 1,147 feet MSL to 1,149 feet MSL. Irrigation flows in the canal generally occur between the months of April and October. The canal is not lined except for a small section that was partially lined with concrete in October 1984. The Peshastin Irrigation District has also recently installed steel pipeline upstream (i.e., to the west and northwest) of this section in an attempt to reduce canal leakage.

Review of available data indicates a strong historical correlation between ground water presence in the in-waste monitoring well and a seasonal water flow in the irrigation canal. Chelan County records show that water levels rose in the well during both the 1983 and 1984 irrigation seasons. However, following partial lining of the canal after the 1984 season, the in-waste monitoring well remained dry throughout the 1985 irrigation season. It is probable that prior to 1985, leakage from the irrigation canal was occurring and collecting at the base of the waste disposal area.

Possible seepage paths from the irrigation canal to the waste area included movement along the buried original ground surface and/or movement along the slide plane(s) within the underlying landslide deposits. Water levels in the in-waste well have risen quickly in response to irrigation flow in the canal. As a result, seepage paths from the canal likely had direct connection to the waste disposal areas.

An in-waste monitoring well was drilled through the waste pile by Chelan County and terminated in native soils. The well is located between the two depressions in the original ground surface that existed prior to any waste disposal occurring at the site. It appears that the native soils in which this well is founded are sufficiently permeable, such that the water level measured in the well approximates the saturation level in the waste area. The reported approximate bottom elevation of the in-waste well (985 feet MSL) is at least 2 feet below the reported base or bottom elevation of the waste disposal area (987 feet MSL). Since the in-waste well has been dry since October 1984, it appears that saturation of the bottom of the waste disposal areas has not recurred following partial lining of the irrigation canal.

Reported leachate seeps at the base of the bluff near the Wenatchee River are considered to be discharge points for perched water in the waste area.

3.4 Ground Water and Surface Water Uses

The general geology and hydrology of the wells in the Dryden area appears to be much the same as that of the Dryden Landfill site: ground water flowing through fractures in the sandstone. Very few wells exist in the area as it is difficult to intercept the fractures. Most of the water supply comes from springs.

The major public supply comes from springs located about 0.5 mile to the southeast of the site. Contamination from the landfill does not seem to threaten these supplies, as they are located about 1120 feet above mean sea level. The elevation of the landfill is about 1050 feet above mean sea level, some 70 feet below the elevation of the water supply.

Public and private wells and springs within three miles of the landfill serve 1560 people. There is no recorded use of surface water for drinking purposes within this distance, however, surface water is used for irrigation and recreation.

4.0 ECOLOGY SITE INSPECTIONS

A Phase I SI was conducted at the landfill during the morning of June 9, 1987. Lloyd Berry, Chelan County Public Works, accompanied Bob Kievit, EPA WOO, and myself. We went over the PA/SI process and the

stage of involvement of the Dryden Landfill. Mr. Berry presented his views of the impending closure and compliance with Ecology's Minimum Functional Standards.

Mr. Berry pointed out the original, in-waste, monitoring well and the locations of the series of four additional monitoring wells recently installed, plus the irrigation ditches which run around the west and south perimeters of the site. He explained how these ditches were either lined with concrete or replaced by sections of approximately four-foot diameter steel pipe. This apparently served to solve the "leaking" problem of the ditches, which was believed to be responsible for most of the leachate, as the in-waste well is now in a state of continual dryness. We confirmed this with a water level indicator tape, and climbed up to view the ditches. Although it was obvious the river was probably at too high a stage to detect any leachate influx, we also inspected the length of river bank from the highway bridge to past the base of the cliff at the south end of the landfill. No direct evidence of any leachate seeps was detected. (See Appendix B for further details in the 6/25/87 memo and Appendix D for photographs.)

Bob and I returned the following day after receiving permission to get keys from the attendant for unlocking the newer monitoring wells. Unfortunately, the bailers we had were too large for the wells, thus no ground water samples were collected. We did use the water level indicator tape to determine that there would have been sufficient water in these wells to sample (with a proper sized bailer).

I returned to the landfill November 18, 1987 to conduct a Phase II SI, accompanied by Fred Gardner and Tom Harris, Ecology PA/SI Unit. We sampled three monitoring wells first (MW-4, MW-3, and MW-2, samples MJS081, MJS082 and MJS083 respectively). Static water levels were first determined, well volumes calculated, and each well purged. MW-4 and MW-3 were emptied of two volumes each prior to sampling, as the water levels remained unchanged. The deeper (176 feet) MW-2 was purged only once due to depth and time constraints. (The water level here also remained the same after removal of the one volume.)

The Wenatchee River was sampled just under the surface along the right bank about 50 feet upstream of the highway bridge (sample MJS084). A sediment sample, MJS84, was collected as a composite of the upper two inches of river sediment at that location.

There was a definite flow of ground water as a small seep, exiting along the bank of the river about 50 feet below the highway bridge. This drained from the flat area between the northeast edge of the landfill and the highway. There was some evidence of prolific algal growth in the vicinity, indicating possible nutrient enrichment. A small hole was excavated at this seepage, collecting sediment sample MJS85 at the same time, and water sample MJS085.

Further down the river, at the base of the cliff at the southeast end of the landfill area, there was sufficient evidence of enrichment (algal growth) in local surface waters to suspect presence of leachate contamination, relative to upstream conditions. Water sample MJS086 and sediment sample MJS86 were collected from a visible flow of water emanating at a level distinctly upgradient of the river water level.

All samples were kept at 4°C until delivery to Manchester Laboratory the next day and were analyzed for a full scan of priority pollutants (cyanide, organics, pesticides/PCBs, base/neutrals/acids, and priority pollutant metals).

Further details are available in the 12/1/87 memo (Appendix B) and photographs (Appendix D).

5.0 ANALYTICAL PARAMETERS

5.1 Quality Control/Quality Assurance (QC/QA) of Sample Collection

Stringent QA/QC procedures for sample collection were developed in conjunction with the EPA Site Inspection Sampling Guidelines, and training course literature. These procedures are discussed in detail in the sampling and safety plans which were developed for this site prior to performing the actual inspection (see Appendix E). Procedures for documentation, chain of custody, decontamination of samples and personnel, safety, and labeling are included in these plans.

5.2 Quality Control/Quality Assurance (QA/QC) of Laboratory Analyses

QA/QC of analytically derived data was performed by Manchester Laboratory following in-house procedures (Appendix A). There were no qualifications recorded regarding the analytical results, with the exception of several minor indicators of blank contamination by laboratory reagents and phthalates.

6.0 RESULTS AND DISCUSSION

Results of full scan priority pollutant analyses for the six water and three sediment samples are enclosed in Appendix A, with only a summary presented here:

Cyanide: A value of less than the minimum detectable concentration for total cyanide (0.005 mg/l) was reported for the six water samples, with the sediment samples at 0.06 mg/kg or less.

Base/Neutral/Acids: No detectable concentrations were reported for any sample, with the exception of very low concentrations of several phthalate compounds in two of the sediment samples. This is not surprising considering the source of leachate, however the results were flagged with a qualifier that the same analytes were also detected in the blank sample, indicating possible/probable blank contamination.

Pesticides/PCB: No detectable concentrations were reported for any sample.

Volatile Organics: There were several laboratory organic reagents which were reported at above detectable concentrations in nearly all

the environmental samples, however these were also present in the blank sample at the approximate concentrations.

Priority Pollutant Metals: Detectable metal concentrations are summarized in Table 1. No concentrations significantly higher (by an order of magnitude) than either the "upgradient" ground water sample from MW-4, or the furthest upriver surface water sample were reported. No metal concentration exceeded drinking water standards (MCL) except for chromium in the two monitoring wells (MW-3 and MW-4) located to the north of the landfill. The monitoring well MW-2 (nearest to the river) sample and the leachate-impacted sample from the small upriver seepage, however, were both at least 75% of MCL.

Metal concentrations in the sediment samples also showed no significant differences except for one metal. Lead was not detected in the lower seepage area nor in the upriver samples, but was present at 24.5 mg/kg in the sample from the small upper seepage. (Note: this was not reflected in the respective water sample, as the concentration of lead here was below the limit of detection.)

Table 2 summarizes metals concentrations reported for the original, in-waste, well from 1981-1986, along with the range of concentrations in the three wells sampled during this SI. Only chromium and nickel appear to have increased in concentrations, compared to earlier samples, although the data is too limited to be significant.

The metal concentrations measured during this SI in the leachate seep also showed no significant increases from the earlier samples, except again perhaps for chromium and nickel. Zinc concentrations appear to have decreased in both the well and seep samples compared to 1983/84/86 samples.

The metals concentrations determined for both the well and seep samples collected during the present SI tend to confirm earlier conclusions that the leachate is relatively low, by landfill standards, in metals concentrations (September 19, 1983 Survey Report, PA files). However, determining the environmental significance of the chromium concentrations recorded is complicated by several known features:

- As to the potential source, the EPA Open Dump Inventory form of August 1980 lists the primary types of wastes received as: municipal solid waste, domestic sludge and agricultural solid waste. File records indicate that septage sludge was no longer permitted to be disposed of after August 20, 1980. No other records are available as to types of waste which could have been received at the landfill other than a CERCLA 103c Notification form filed by Dependable Disposal Co., Inc. in June 1981. Types of wastes checked were: organics, inorganics, solvents, pesticides, mixed municipal wastes and unknown. Sources indicated were: construction, utility companies, sanitary refuse, lab-hospital and unknown. The time period for waste disposal was April 1978 - June 1981. However, a follow-up disclaimer stated that the wastes "could have" contained materials now defined as hazardous waste, not that any necessarily did.

- Total chromium concentrations in the in-waste well ranged between 6-69 ug/l for three samples taken June 1981-September 1984, while for the four on-site monitoring wells MW1-MW4 sampled January, 1986, all concentrations were less than 5 ug/l. As mentioned previously, it is presumptive to state that chromium concentrations now appear to be increasing because the three SI samples ranged from 38-71 ug/l. What is important to note in this regard is that one of the higher concentrations of total chromium recorded at the landfill (66 ug/l) was in the SI sample from MW-4, considered to be an upgradient well in the perched aquifer. This is reflected in the value of 44 ug/l recorded for chromium in the small, upper seep, coming from an area between the northern boundary of the main part of the landfill and the state highway. Recall that MW-4 is at the far northwest part of the unused (for waste disposal) part of the landfill. The MW-4 sample also recorded the highest lead, mercury and zinc concentrations, however this was not reflected in the concentrations of these respective metals in the small upriver seepage sample.

  The main suspected leachate-impacted sample from the base of the cliff area recorded chromium concentrations below the detection limit of 1 ug/l, as did the upriver (control) surface water sample. There are also no real difference between these two samples in all the other parameters measured, compared to the results for the small upriver seep, thus the "cliff bottom" sample was for practical purposes not "leachate-affected."

- The origin of several of these metals showing the higher concentration could well be merely a reflection of the area geology and/or historical activities upriver of the site. This is based on the sediment results (in Table 1) which show that chromium and nickel concentrations, especially, are insignificantly different between the upriver control and the two (suspected) leachate seepage areas. These, and other metals determined, are in very similar concentrations to those measured in a background control sample for the Cashmere landfill, about 10 miles downriver (Appendix A).

  The only other recent priority pollutant scan performed on a landfill sample was in January 1986, during installation of the four monitoring wells MW-1 to MW-4. Metal concentrations, presented in Table 1, were measured for all wells and have already been discussed. Only MW-2, the downgradient well nearest to the river, had a full scan made, the other three wells being analyzed only for primary and secondary drinking water standards. As with the samples collected in this SI, there were no detectable concentrations of pesticides/PCBs, base/neutral/acids and volatile organics (except for blank contaminants).

  Figure 2 is a sketch of the various elevations of on-site features as reported in the 1986 Dryden Landfill Closure Plan, and determined during the SI. It is clear that MW-4 monitors the perched aquifer which historically had been locally confined to the general vicinity of the two depression areas at the

center of the landfill area. As the in-waste well has not had water recorded in it since October 1984, it appears that saturation of the bottom of the waste disposal area has not occurred since partial lining of the irrigation canal. Based on Sweet, Edwards and Associates, Inc. and Washington State Department of Transportation borings in the area, it is believed that the perched water zone is now concentrated primarily off-site, to the north and west of the landfill. This may explain why the minor seepage sampled upriver near the highway bridge showed higher levels of metal contaminants than did the suspected seepage sample from the bottom of the cliff. (This latter sample much more closely approximates those from upriver and MW-2, the well monitoring the water table aquifer.) No explanation can be made concerning the relatively higher concentration of nickel in MW-3, compared to the other two wells, except that perhaps MW-2 is more easily recharged by the river, thus causing a dilution effect.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Priority pollutant scans were run on water and sediment samples upriver of, and at two suspected leachate-impacted surface water areas adjacent to, the Dryden Landfill. Three on-site ground water monitoring wells were also sampled/analyzed. No concentrations of concern were detected for any constituent in terms of water quality standards with the exception of total chromium in two of the on-site monitoring wells. The concentrations in the remaining monitoring well, and the smaller, upriver, seep, were greater than 75% of MCL.

Interpretations of the environmental significance of this was complicated by the fact that the well considered as upgradient to any leachate contamination feature of the landfill recorded one of the highest values of chromium and also that the upriver "control" sediment sample had the highest chromium concentration recorded for the sediment samples.

Analyses of a sample, taken as representative of historically leachate-impacted surface water at the base of the cliff, showed no significant difference from an upriver control sample. It is apparent that recent improvements in lining and sealing of the irrigation canal has substantially reduced seepage of water into and through most of the landfill. This is especially the case in summer when the greatest demand is placed on the irrigation water and the river is at its lowest level.

A rather small leachate seep from an area believed to be where sewage sludge had been deposited prior to 1981 showed somewhat elevated levels only of several metals, compared to the other two surface water samples, however there are no indications these are environmentally significant. (There were no significant concentrations of priority pollutants other than metals detected in any of the samples.)

The landfill is currently undergoing closure, with a request for a variance in landfill cover conditions having been made by the county to Ecology Solid and Hazardous Waste Program. At the time of this writing, this variance has been tentatively granted, however with some modifications (Appendix B), thus the landfill will undergo closure. Post-closure monitoring of ground water will be overseen by Ecology and Chelan-Douglas Health District.

On this basis, and lack of documented significant hazardous substance contamination directly attributable to the landfill, it is my recommendation that the PA/SI Unit pursues no further action at the Dryden Landfill site, and that it be removed from the active CERLIS list of potential hazardous waste sites.

TABLE 1
DETECTABLE CONCENTRATIONS - PRIORITY POLLUTANT METALS (ug/l)

Dryden Landfill, November 18, 1987

Metal	Monitoring Wells MW-4 MJS081	MW-3 MJS082	MW-2 MJS083	"Leachate" Seep Cliff Bottom	"Leachate" Seep Upriver	Further Upriver Water	Transport Blank	MCL*
Arsenic	9	2	3	1U	1U	1U	1U	50
Berylium	1.1	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	--
Cadmium	0.3	0.2U	0.7	0.2U	0.2U	0.2U	0.2U	10
Chromium	66	71	38	1U	44	1U	1U	50
Copper	30	51	29	9	27	8	1U	1,000
Lead	15	9	1U	1U	1U	1U	1U	50
Nickel	33	209	29	7	108	15	5U	--
Zinc	114	63	26	2	12	1U	1U	5,000
Mercury	0.174	0.058	0.058	0.058U	0.058	0.058U	0.058U	2

Sediment Samples (mg/kg)

Metal	Cliff Bottom	Upriver Seep	Upriver "Control"
Arsenic	2.3	4.1	1.9
Berylium	0.14	0.03	0.02U
Cadmium	0.08	0.06	0.06
Chromium	43.8	52.8	57.0
Copper	21.4	17.3	13.6
Lead	0.5U	24.5	0.5U
Nickel	57.6	76.5	95.4
Zinc	47.9	41.8	21.6
Mercury	0.017	0.006U	0.006U

* = National Primary Drinking Water Maximum Concentration Levels.

U = Analyzed for, but not detected. Value shown is the minimum detectable concentration.

PRIORITY POLLUTANT METALS SUMMARY (ug/l)

Metal	In-waste Monitoring Well June 1981	June 1982	September 1983	Range MW-1, MW-2 MW-3, MW-4 January 1986	November 1987 3 SI Wells
As	--	35	38	--	2-9
Be	--	--	5U	--	0.2U-1.1
Cd	7	7	0.4	< 3-3	0.2U-0.7
Cr	10	69	6	< 5	38-71
Cu	250	--	24	5-22	29-51
Pb	32	69	16	< 3	1U-15
Ni	98	--	4	< 20	29-209
Ag	--	--	0.4	< 5	0.2U
Zn	340	--	308	30-83	26-114
Hg	--	0.5	0.075	--	0.058-0.174
Mn	--	--	1715	30-1330	--

Metal	Leachate Seep Samples August 1980	September 1982	September 1983	October 1984	November 1987 SI Seeps
As	13	--	19	--	1U
Be	--	--	5U	--	0.2U
Cd	< 2	8	0.4	--	0.2U
Cr	10	< 10	12	14	1U-44
Cu	--	< 10	33	19	9-27
Pb	< 10	< 20	15	6	1U
Ni	--	< 20	18	1	7-108
Ag	--	--	0.1	--	0.2U
Zn	--	5	78	8	2-12
Hg	< 0.05	--	0.075	--	0.058U
Mn	--	--	1355	1260	--

8.0 REFERENCES

Aerial Photographic Analysis of the Dryden Landfill, Dryden, WA. USEPA Environmental Monitoring Systems Laboratory.

Comprehensive Solid Waste Management Plan for Chelan County, 1972.

Dryden Landfill Closure Plan, Chelan County Department of Public Works. 1986. CH2M Hill and Sweet, Edwards & Associates.

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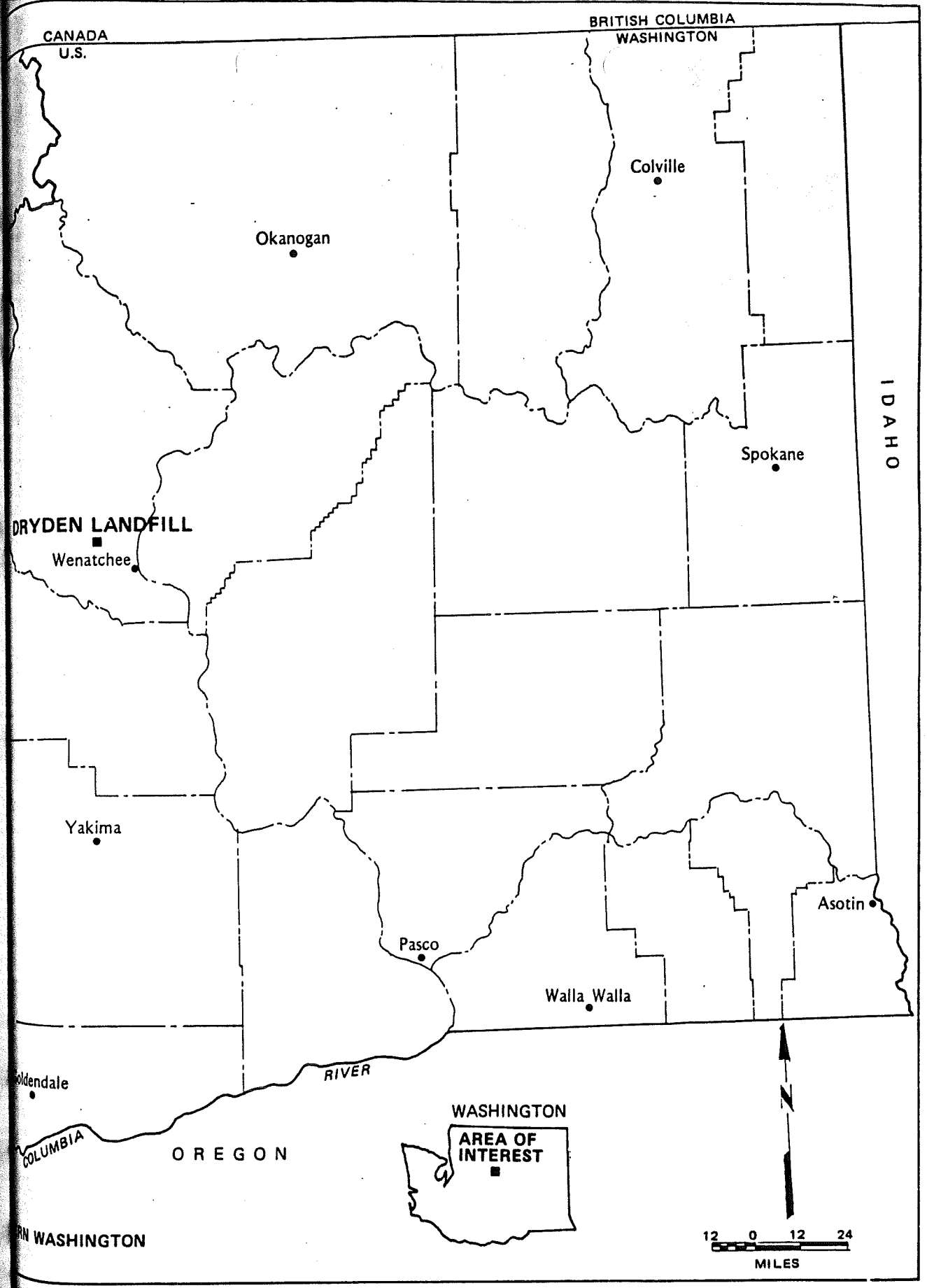
Soil Survey of Chelan Area, WA USAD. 1968.

U.S.G.S. Leavenworth Quad. 1954.

Washington Department of Ecology and Earth Resources Bulletin No. 75. Geology of Chelan and Douglas Counties. 1983.



CATION MAP, DRYDEN LANDFILL, DRYDEN, CHELAN COUNTY, WASHINGTON.

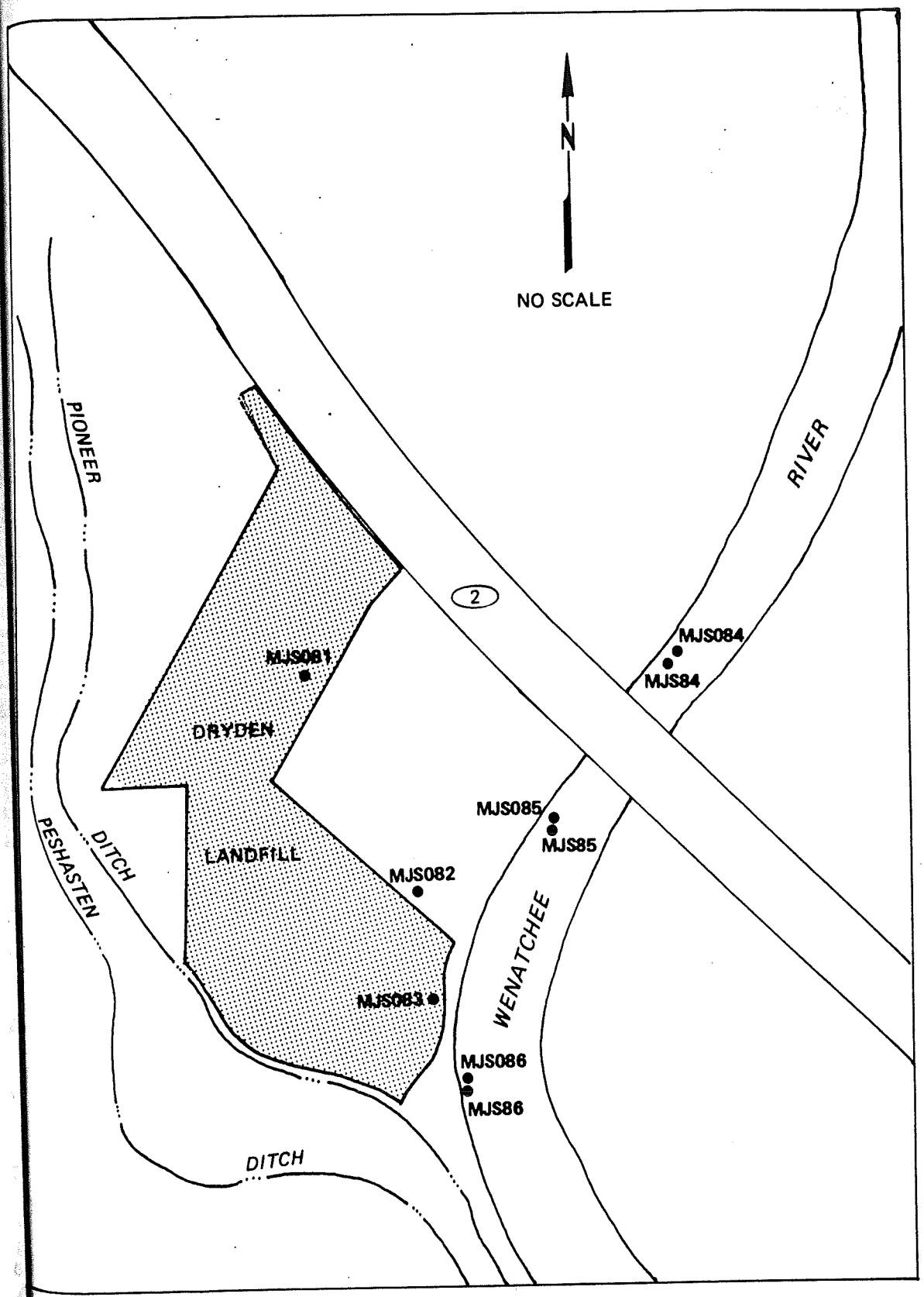
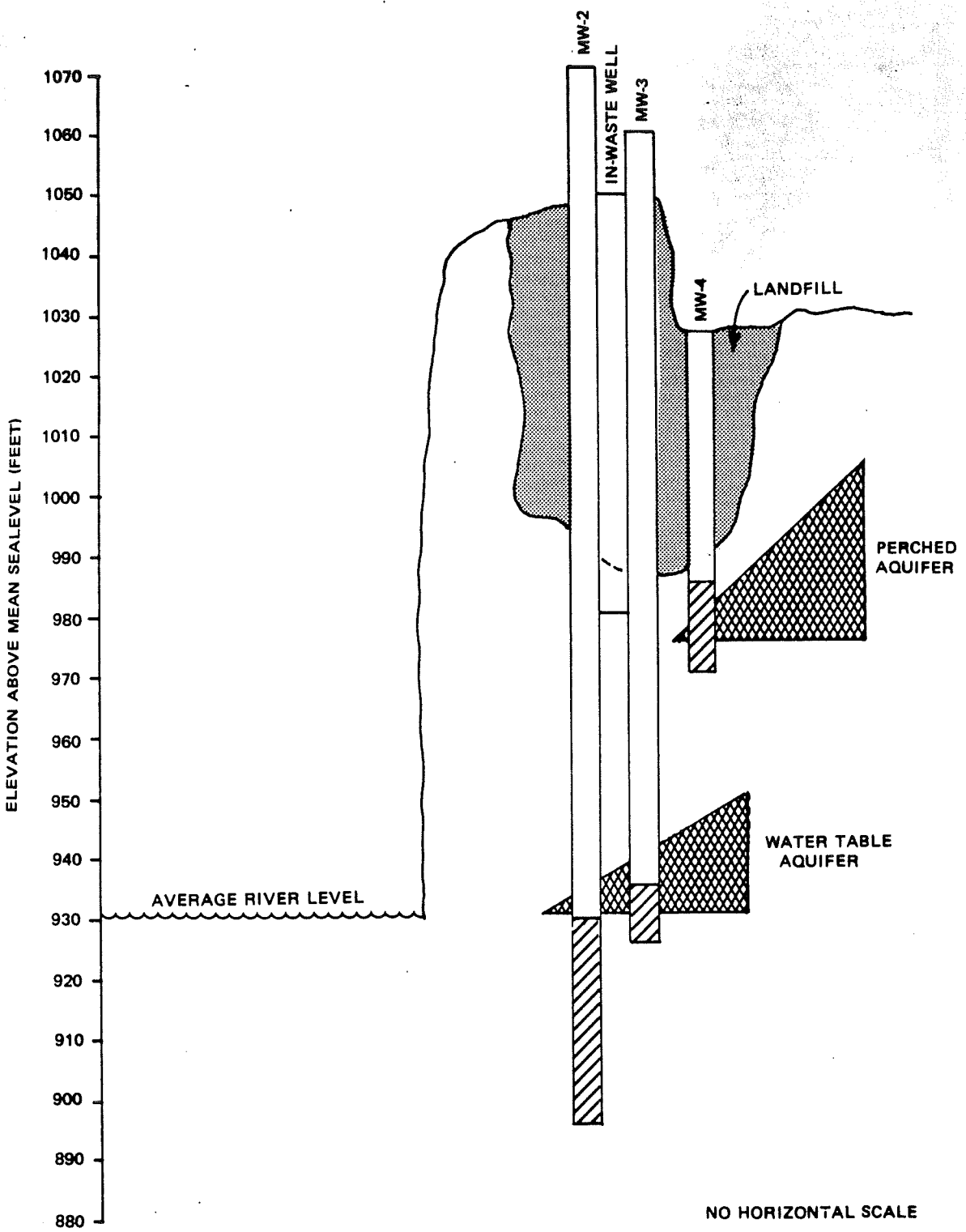


Figure 1. CHELAN COUNTY DRYDEN LANDFILL SITE SAMPLING LOCATION MAP.



2. AVERAGE RIVER, RANGE OF GROUNDWATER, AND WELL DEPTHS/ELEVATIONS AT DRYDEN LANDFILL.

State of Washington Department of Ecology

266-43 COST # 12615

SAMPLE DATA & ANALYSIS REQUIRED

Program Code ☐☐☐

Project Code ____

Project/Name PA/SI - Dryden

☑ Enforcement/Custody ☐ Class II

☐ Possible Toxic/Hazardous Notes ____

Yr	Mo	Da	Hr	Mn	Field Station Identification	Lab Sample Wk	Lab Sample Seq	Matrix Code	Source Code	No. of Containers	General Chemistry: Cyanide	Base/Neutrals/Acids	Volatile Organics	Pesticides/PCB's	P.P. Metals
87	11	18			MJS081	477	069	10	23	5	X	X	X	X	X
87	11	18			MJS082		70	10	13	5	X	X	X	X	X
87	11	18			MJS083		71	10	13	5	X	X	X	X	X
87	11	18			MJS084		~~72~~ 79	10	12	5	X	X	X	X	X
87	11	18			MJS085		74	10	15	5	X	X	X	X	X
87	11	18			MJS086		76	10	15	5	X	X	X	X	X
87	11	18			MTS84		73	40	42	3	X	X	X	X	X
87	11	18			MJS85		75	40	42	3	X	X	X	X	X
87	11	18			MTS86		77	40	42	3					

Other analyses listed on form (no marks): Turbidity, pH, Conductivity, Total Hardness, Chloride, TS, TSS, TNVS, TNVSS, TSS, % Solids, Nutrients (4), Ammonia, Nitrate-Nitrite, Total Phosphorous, Ortho-Phosphate, BOD/5 Day, COD Chem Oxy Demand; Fecal Coliform Bacteria, Total Coliform Bacteria, Enterococcus, Fish Bioassay; PCB's Only, Purgeable Halocarbons, Herbicides, Hydrocarbon Analysis, Phenolics (AAP), Oil & Grease; EP Tox Metals; Specific List: Total ☐ Recoverable ☐ Totals ☐ Dissolved

Project Officer M Spearman

Sampler(s) M Spearman, T Harris, F Gordon

Recorder M Spearman

Date 11/18/87

Chain Of Custody Record

Relinquished By:	Received By:	Yr	Mo	Da	Hr	Mn	Seal I.D.	Condition of Seals	Comments
M Spearman		87	11	19					Tape in place/ wate to insure custody
	Pat Crawford	87	11	19	06	50			
	[illegible signature]	87	11	19	09	15			

RECEIVED Department of Ecology NOV 19 1987

Manchester Environmental Laboratory P.O. Box 346 Manchester, WA 98353

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

Ecy 040-115 Rev. 7/87

Project: DOE-062B CHELAN CO. DRYDEN LANDFILL

Sample No: 87 477069 Begin Sample Date: 87/11/18 : Source: Well (Test/Observati Depth: QA Code:

Partial

Laboratory: WE Description: MJS081

Gen Inorg/Phys-Speci Parameter		Water-Total Result	Units
Cyanide	Total	.005U	mg/l

Metals - PP Parameter		Water-Total Result	Units
Arsenic	As-Total	9	ug/l
Berylium	Be-Total	1.1	ug/l
Cadmium	Cd-Total	.3	ug/l
Chromium	Cr-Total	66	ug/l
Copper	Cu-Total	30	ug/l
Lead	Pb-Total	15	ug/l
Thallium	Tl-Total	1U	ug/l
Nickel	Ni-Total	33	ug/l
Silver	Ag-Total	0.2U	ug/l
Zinc	Zn-Total	114	ug/l
Antimony	Sb-Total	1U	ug/l
Selenium	Se-Total	1	ug/l
Mercury	Hg-Total	.174	ug/l

Contract Lab Program Parameter		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Project: DOE-062B CHELAN CO, DRYDEN LANDFILL Officer: MJS Account: 28E43

Sample No: 87 477070 Begin Sample Date: 87/11/18 : Source: Well (Test/Observati Depth: QA Code:

Laboratory: WE Description: MJS082

Gen Inorg/Phys-Speci		Water-Total	
Parameter		Result	Units
Cyanide	Total	.005U	mg/l

Metals - PP		Water-Total	
Parameter		Result	Units
Arsenic	As-Total	2	ug/l
Berylium	Be-Total	0.2U	ug/l
Cadmium	Cd-Total	.2U	ug/l
Chromium	Cr-Total	71	ug/l
Copper	Cu-Total	51	ug/l
Lead	Pb-Total	9	ug/l
Thallium	Tl-Total	1U	ug/l
Nickel	Ni-Total	209	ug/l
Silver	Ag-Total	0.2U	ug/l
Zinc	Zn-Total	63	ug/l
Antimony	Sb-Total	1U	ug/l
Selenium	Se-Total	1	ug/l
Mercury	Hg-Total	.058	ug/l

Contract Lab Program		Water-Total	
Parameter		Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Project: DOE-062B CHELAN CO, DRYDEN LANDFILL Officer: MJS Account: 28E43

Sample No: 87 477071 Begin Sample Date: 87/11/18 : Source: Well (Test/Observati Depth: QA Code:

Laboratory: WE Description: MJS083

Gen Inorg/Phys-Speci Parameter		Water-Total Result	Units
Cyanide	Total	.005U	mg/l

Metals - PP Parameter		Water-Total Result	Units
Arsenic	As-Total	3	ug/l
Berylium	Be-Total	0.2U	ug/l
Cadmium	Cd-Total	.7	ug/l
Chromium	Cr-Total	38	ug/l
Copper	Cu-Total	29	ug/l
Lead	Pb-Total	1U	ug/l
Thallium	Tl-Total	1U	ug/l
Nickel	Ni-Total	29	ug/l
Silver	Ag-Total	0.2U	ug/l
Zinc	Zn-Total	26	ug/l
Antimony	Sb-Total	1U	ug/l
Selenium	Se-Total	1	ug/l
Mercury	Hg-Total	.058	ug/l

Contract Lab Program Parameter		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Project: DOE-0628 CHELAN CO. [illegible] LANDFILL Officer: MJB

Sample No: 87 477072 Begin Sample Date: 87/11/18 : Source: Ambient Stream/River Depth: QA Code:

Laboratory: WE Description: MJS084 (WATER)

Gen Inorg/Phys-Speci Parameter		Water-Total Result	Units
Cyanide	Total	.005U	mg/l

Metals - PP Parameter		Water-Total Result	Units
Arsenic	As-Total	1U	ug/l
Berylium	Be-Total	0.2U	ug/l
Cadmium	Cd-Total	.2U	ug/l
Chromium	Cr-Total	1U	ug/l
Copper	Cu-Total	8	ug/l
Lead	Pb-Total	1U	ug/l
Thallium	Tl-Total	1U	ug/l
Nickel	Ni-Total	15	ug/l
Silver	Ag-Total	0.2U	ug/l
Zinc	Zn-Total	1U	ug/l
Antimony	Sb-Total	1U	ug/l
Selenium	Se-Total	1U	ug/l
Mercury	Hg-Total	.058U	ug/l

Contract Lab Program Parameter		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Project: DOE-0625 CHELAN CO. DRYDEN LANDFILL Officer: MJS Account: 28E43

Sample No: 87 477073 Begin Sample Date: 87/11/18 : Source: Bottom Sediment or D Depth: QA Code:

Laboratory: WE Description: MJS084 (SOIL)

Gen Inorg/Phys-Speci Parameter		Sediment Result	Units
Cyanide	Sedmt	.06	mg/kg-dr

Metals - PP Parameter		Sediment Result	Units
Arsenic	As-Sedmt	1.9	mg/kg-dr
Berylium	Be-Sedmt	.02U	mg/kg-dr
Cadmium	Cd-Sedmt	0.06	mg/kg-dr
Chromium	Cr-Sedmt	57.0	mg/kg-dr
Copper	Cu-Sedmt	13.6	mg/kg-dr
Lead	Pb-Sedmt	0.5U	mg/kg-dr
Nickel	Ni-Sedmt	95.4	mg/kg-dr
Silver	Ag-Sedmt	0.02U	mg/kg-dr
Zinc	Zn-Sedmt	21.6	mg/kg-dr
Antimony	Sb-Sedmt	0.1U	mg/kg-dr
Selenium	Se-Sedmt	0.2	mg/kg-dr
Thallium	Tl-Sedmt	0.1U	mg/kg-dr
Mercury	Hg-Sedmt	.006U	mg/kg-wt

Contract Lab Program Parameter		Sediment Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Project: DOE-062B CHELAN CO, DRYDEN LANDFILL Officer: MJS Account: 28E43

Sample No: 87 477074 Begin Sample Date: 87/11/18 : Source: Spring/Seepage Depth: QA Code:

Laboratory: WE Description: MJS085 (WATER)

Gen Inorg/Phys-Speci		Water-Total	
Parameter		Result	Units
Cyanide	Total	.005U	mg/l

Metals - PP		Water-Total	
Parameter		Result	Units
Arsenic	As-Total	1U	ug/l
Berylium	Be-Total	0.2U	ug/l
Cadmium	Cd-Total	.2U	ug/l
Chromium	Cr-Total	44	ug/l
Copper	Cu-Total	27	ug/l
Lead	Pb-Total	1U	ug/l
Thallium	Tl-Total	1U	ug/l
Nickel	Ni-Total	108	ug/l
Silver	Ag-Total	0.2U	ug/l
Zinc	Zn-Total	12	ug/l
Antimony	Sb-Total	1U	ug/l
Selenium	Se-Total	1U	ug/l
Mercury	Hg-Total	.058	ug/l

Contract Lab Program		Water-Total	
Parameter		Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Sample No: 87 477075 Begin Sample Date: 87/11/18 : Source: Bottom Sediment or D Depth: QA Code:

Laboratory: WE Description: MJS085 (SOIL)

Gen Inorg/Phys-Speci Parameter		Sediment Result	Units
Cyanide	Sedmt	.05	mg/kg-dr

Metals - PP Parameter		Sediment Result	Units
Arsenic	As-Sedmt	4.1	mg/kg-dr
Berylium	Be-Sedmt	.03	mg/kg-dr
Cadmium	Cd-Sedmt	0.06	mg/kg-dr
Chromium	Cr-Sedmt	52.8	mg/kg-dr
Copper	Cu-Sedmt	17.3	mg/kg-dr
Lead	Pb-Sedmt	24.5	mg/kg-dr
Nickel	Ni-Sedmt	76.5	mg/kg-dr
Silver	Ag-Sedmt	0.02U	mg/kg-dr
Zinc	Zn-Sedmt	41.8	mg/kg-dr
Antimony	Sb-Sedmt	0.1U	mg/kg-dr
Selenium	Se-Sedmt	0.1	mg/kg-dr
Thallium	Tl-Sedmt	0.1U	mg/kg-dr
Mercury	Hg-Sedmt	.006U	mg/kg-wt

Contract Lab Program Parameter		Sediment Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Sample No: 87 477076 Begin Sample Date: 87/11/18 : Source: Spring/Seepage Depth: QA Code:

Laboratory: WE Description: MJS086 (WATER)

Gen Inorg/Phys-Speci Parameter		Water-Total Result	Units
Cyanide	Total	.005U	mg/l

Metals - PP Parameter		Water-Total Result	Units
Arsenic	As-Total	1U	ug/l
Berylium	Be-Total	0.2U	ug/l
Cadmium	Cd-Total	.2U	ug/l
Chromium	Cr-Total	1U	ug/l
Copper	Cu-Total	9	ug/l
Lead	Pb-Total	1U	ug/l
Thallium	Tl-Total	1U	ug/l
Nickel	Ni-Total	7	ug/l
Silver	Ag-Total	0.2U	ug/l
Zinc	Zn-Total	2	ug/l
Antimony	Sb-Total	1U	ug/l
Selenium	Se-Total	1U	ug/l
Mercury	Hg-Total	.058U	ug/l

Contract Lab Program Parameter		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Project: DOE-062B CHELAN CO, DRYDEN LANDFILL Officer: MJS Account: 28243

Sample No: 87 477077 Begin Sample Date: 87/11/18 : Source: Bottom Sediment or D Depth: QA Code:

Laboratory: WE Description: MJS086 (SOIL)

Gen Inorg/Phys-Speci Parameter		Sediment Result	Units
Cyanide	Sedmt	.06	mg/kg-dr

Metals - PP Parameter		Sediment Result	Units
Arsenic	As-Sedmt	2.3	mg/kg-dr
Berylium	Be-Sedmt	.14	mg/kg-dr
Cadmium	Cd-Sedmt	0.08	mg/kg-dr
Chromium	Cr-Sedmt	43.8	mg/kg-dr
Copper	Cu-Sedmt	21.4	mg/kg-dr
Lead	Pb-Sedmt	0.5U	mg/kg-dr
Nickel	Ni-Sedmt	57.6	mg/kg-dr
Silver	Ag-Sedmt	0.02U	mg/kg-dr
Zinc	Zn-Sedmt	47.9	mg/kg-dr
Antimony	Sb-Sedmt	0.1U	mg/kg-dr
Selenium	Se-Sedmt	0.1	mg/kg-dr
Thallium	Tl-Sedmt	0.1U	mg/kg-dr
Mercury	Hg-Sedmt	.017	mg/kg-wt

Contract Lab Program Parameter		Sediment Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Project: DOE-062B CHELAN CO, DRYDEN LANDFILL Officer: MJS Account: 28E43

Sample No: 87 477078 Begin Sample Date: 87/11/18 : Source: Water (General) Depth: QA Code:

Laboratory: WE Description: TRANSPORT BLANK

Metals - PP Parameter		Water-Total Result	Units
Arsenic	As-Total	1U	ug/l
Berylium	Be-Total	0.2U	ug/l
Cadmium	Cd-Total	.2U	ug/l
Chromium	Cr-Total	1U	ug/l
Copper	Cu-Total	1U	ug/l
Lead	Pb-Total	1U	ug/l
Thallium	Tl-Total	1U	ug/l
Nickel	Ni-Total	5U	ug/l
Silver	Ag-Total	0.2U	ug/l
Zinc	Zn-Total	1U	ug/l
Antimony	Sb-Total	1U	ug/l
Selenium	Se-Total	1U	ug/l
Mercury	Hg-Total	.058U	ug/l

Contract Lab Program Parameter		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP

(Sample Complete)

Project: DOE-062B CHELAN CO, DRYDEN LANDFILL Officer: MJS Account: 28243

Sample No: 87 477079 Begin Sample Date: 87/11/18 : Source: Water (General) Depth: QA Code:

Laboratory: WE Description: TRANSFER BLANK

Contract Lab Program Parameter	Water-Total Result	Units
B/N/Acid GC/MS	REQ	CLP

(Sample Complete)

ANALYTICAL
RESOURCES
INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, Wa 98109-5187
(206) 621-6490

ANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477069 - 81

Sample ID: 1207 A
ple Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

ta Release Authorized: MW

Instrument ID: FINN III
Date Analyzed: 11/23/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
4-87-3	Chloromethane	4.0 U
4-83-9	Bromomethane	1.7 U
5-01-4	Vinyl Chloride	1.5 U
5-00-3	Chloroethane	1.6 U
5-09-2	**Methylene Chloride**	**7.3 B**
7-64-1	**Acetone**	**2.6 B**
5-15-0	Carbon Disulfide	5.0 U
5-35-4	1,1-Dichloroethene	3.0 U
5-34-3	1,1-Dichloroethane	2.0 U
6-60-5	Trans-1,2-Dichloroethene	1.4 U
7-66-3	Chloroform	1.2 U
07-06-2	1,2-Dichloroethane	1.8 U
8-93-3	**2-Butanone**	**0.7 JB**
1-55-6	1,1,1-Trichloroethane	0.5 U
3-23-5	Carbon Tetrachloride	3.2 U
8-05-4	Vinyl Acetate	2.9 U
5-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	**Toluene**	**0.6 JB**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	1.3 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	102%
Bromofluorobenzene	100%
d4-1,2-Dichloroethane	84.0%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477069 -81

Lab Sample ID: 1207A
Sample Matrix: Waters

QC Report No: 1207-WD0E
Project No: Dryden
Date Received: 11/20/87

Date Release Authorized: Ryan N. Huber

Date extracted: 11/23/87
Date Analyzed: 11/25/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1.9 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	76.6%
2-Fluorobiphenyl	74.6%
d14-p-Terphenyl	78.2%

***Acid surrogate recoveries**

d5-Phenol	31.2%
2-Fluorophenol	48.5%
2,4,6-Tribromophenol	81.4%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-69 -81

Lab Sample ID: 1207 A
Matrix: Water

Date Extracted: 11/23/87
Date Analyzed: 11/25/87
Conc/Dil Factor: 1:10
Volume Extracted: 1 Liter

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: NO
Alumina Cleanup: YES

Data Release Authorized:

CAS Number		ug/L
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.1 U
72-55-9	4,4'-DDE	0.1 U
72-20-8	Endrin	0.1 U
33212-65-9	Endosulfan II	0.1 U
72-54-8	4,4'-DDD	0.1 U
1031-07-8	Endosulfan Sulfate	0.1 U
50-29-3	4,4'-DDT	0.1 U
72-43-5	Methoxychlor	0.1 U
53494-70-5	Endrin Ketone	0.1 U
57-74-9	Chlordane	0.2 U
8001-35-2	Toxaphene	10 U
12674-11-2	Aroclor-1016	1.0 U
53469-21-9	Aroclor-1242	1.0 U
12672-29-6	Aroclor-1248	1.0 U
11097-69-1	Aroclor-1254	1.0 U
11096-82-5	Aroclor-1260	1.0 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendate	**59%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477070 -82

Lab Sample ID: 1207 B
Sample Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

Data Release Authorized: MWJ

Instrument ID: FINN III
Date Analyzed: 11/20/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
74-87-3	Chloromethane	4.0 U
74-83-9	Bromomethane	1.7 U
75-01-4	Vinyl Chloride	1.5 U
75-00-3	Chloroethane	1.6 U
75-09-2	**Methylene Chloride**	**2.6 B**
67-64-1	Acetone	3.5 U
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	3.0 U
75-34-3	1,1-Dichloroethane	2.0 U
156-60-5	Trans-1,2-Dichloroethene	1.4 U
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.8 U
78-93-3	2-Butanone	9.5 U
71-55-6	1,1,1-Trichloroethane	0.5 U
56-23-5	Carbon Tetrachloride	3.2 U
108-05-4	Vinyl Acetate	2.9 U
75-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	3.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	**Toluene**	**1.2 B**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	1.3 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	98%
Bromofluorobenzene	98%
d4-1,2-Dichloroethane	101%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477070 -82

Lab Sample ID: 1207B
Sample Matrix: Waters

QC Report No: 1207-WDOE
Project No: Dryden
Date Received: 11/20/87

Date Release Authorized: Brian W. Beh

Date extracted: 11/23/87
Date Analyzed: 11/25/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1.9 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	80.1%
2-Fluorobiphenyl	77.1%
d14-p-Terphenyl	77.5%

***Acid surrogate recoveries**

d5-Phenol	33.9%
2-Fluorophenol	53.0%
2,4,6-Tribromophenol	89.1%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-70 -82

Lab Sample ID: 1207 B
Matrix: Water

Data Release Authorized:

Date Extracted: 11/23/87
Date Analyzed: 11/25/87
Conc/Dil Factor: 1:10
Volume Extracted: 1 Liter

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: NO
Alumina Cleanup: YES

CAS Number		ug/L
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.1 U
72-55-9	4,4'-DDE	0.1 U
72-20-8	Endrin	0.1 U
33212-65-9	Endosulfan II	0.1 U
72-54-8	4,4'-DDD	0.1 U
1031-07-8	Endosulfan Sulfate	0.1 U
50-29-3	4,4'-DDT	0.1 U
72-43-5	Methoxychlor	0.1 U
53494-70-5	Endrin Ketone	0.1 U
57-74-9	Chlordane	0.2 U
8001-35-2	Toxaphene	10 U
12674-11-2	Aroclor-1016	1.0 U
53469-21-9	Aroclor-1242	1.0 U
12672-29-6	Aroclor-1248	1.0 U
11097-69-1	Aroclor-1254	1.0 U
11096-82-5	Aroclor-1260	1.0 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendale	**70%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477071 - 83

Lab Sample ID: 1207 C
Sample Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

Data Release Authorized: _____

Instrument ID: FINN III
Date Analyzed: 11/20/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
74-87-3	Chloromethane	4.0 U
74-83-9	Bromomethane	1.7 U
75-01-4	Vinyl Chloride	1.5 U
75-00-3	Chloroethane	1.6 U
75-09-2	**Methylene Chloride**	**3.0 B**
67-64-1	**Acetone**	**3.4 JB**
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	3.0 U
75-34-3	1,1-Dichloroethane	2.0 U
156-60-5	Trans-1,2-Dichloroethene	1.4 U
156-59-2	**Cis-1,2-Dichloroethene**	**0.3 J**
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.8 U
78-93-3	2-Butanone	9.5 U
71-55-6	1,1,1-Trichloroethane	0.5 U
56-23-5	Carbon Tetrachloride	3.2 U
108-05-4	Vinyl Acetate	2.9 U
75-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2U
108-88-3	Toluene	1.2 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	**0.6 JB**

***Volatile Organic Surrogate Recoveries**

d8-Toluene	105%
Bromofluorobenzene	100%
d4-1,2-Dichloroethane	90.9%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477071 -83

Lab Sample ID: 1207C
Sample Matrix: Waters

QC Report No: 1207-WDOE
Project No: Dryden
Date Received: 11/20/87

Date Release Authorized: Brian N. Baker

Date extracted: 11/23/87
Date Analyzed: 11/25/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1.9 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	79.4%
2-Fluorobiphenyl	71.8%
d14-p-Terphenyl	80.6%

***Acid surrogate recoveries**

d5-Phenol	22.7%
2-Fluorophenol	35.9%
2,4,6-Tribromophenol	61.7%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-71 -83

Lab Sample ID: 1207 C
Matrix: Water

Data Release Authorized: Peter Kepler

Date Extracted: 11/23/87
Date Analyzed: 11/26/87
Conc/Dil Factor: 1:10
Volume Extracted: 1 Liter

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: NO
Alumina Cleanup: YES

CAS Number		ug/L
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.1 U
72-55-9	4,4'-DDE	0.1 U
72-20-8	Endrin	0.1 U
33212-65-9	Endosulfan II	0.1 U
72-54-8	4,4'-DDD	0.1 U
1031-07-8	Endosulfan Sulfate	0.1 U
50-29-3	4,4'-DDT	0.1 U
72-43-5	Methoxychlor	0.1 U
53494-70-5	Endrin Ketone	0.1 U
57-74-9	Chlordane	0.2 U
8001-35-2	Toxaphene	10 U
12674-11-2	Aroclor-1016	1.0 U
53469-21-9	Aroclor-1242	1.0 U
12672-29-6	Aroclor-1248	1.0 U
11097-69-1	Aroclor-1254	1.0 U
11096-82-5	Aroclor-1260	1.0 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendate	**55%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477072 - 84

Lab Sample ID: 1207 D
Sample Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

Data Release Authorized: MW

Instrument ID: FINN III
Date Analyzed: 11/20/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
74-87-3	Chloromethane	4.0 U
74-83-9	Bromomethane	1.7 U
75-01-4	Vinyl Chloride	1.5 U
75-00-3	Chloroethane	1.6 U
75-09-2	**Methylene Chloride**	**2.4 B**
67-64-1	**Acetone**	**0.7 B**
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	3.0 U
75-34-3	1,1-Dichloroethane	2.0 U
156-60-5	Trans-1,2-Dichloroethene	1.4 U
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.8 U
78-93-3	2-Butanone	9.5 U
71-55-6	1,1,1-Trichloroethane	0.5 U
56-23-5	Carbon Tetrachloride	3.2 U
108-05-4	Vinyl Acetate	2.9 U
75-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	**Toluene**	**1.3B**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	1.3 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	96.7%
Bromofluorobenzene	97.6%
d4-1,2-Dichloroethane	93.6%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477072 - 84

Lab Sample ID: 1207D
Sample Matrix: Waters

QC Report No: 1207-WD0E
Project No: Dryden
Date Received: 11/20/87

Date Release Authorized: Brian N. Bebee

Date extracted: 11/23/87
Date Analyzed: 11/25/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1.9 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	79.5%
2-Fluorobiphenyl	73.1%
d14-p-Terphenyl	92.4%

***Acid surrogate recoveries**

d5-Phenol	33.7%
2-Fluorophenol	51.6%
2,4,6-Tribromophenol	90.2%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-72 -84

Lab Sample ID: 1207 D
Matrix: Water

Data Release Authorized:

Date Extracted: 11/23/87
Date Analyzed: 11/26/87
Conc/Dil Factor: 1:10
Volume Extracted: 1 Liter

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: NO
Alumina Cleanup: YES

CAS Number		ug/L
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.1 U
72-55-9	4,4'-DDE	0.1 U
72-20-8	Endrin	0.1 U
33212-65-9	Endosulfan II	0.1 U
72-54-8	4,4'-DDD	0.1 U
1031-07-8	Endosulfan Sulfate	0.1 U
50-29-3	4,4'-DDT	0.1 U
72-43-5	Methoxychlor	0.1 U
53494-70-5	Endrin Ketone	0.1 U
57-74-9	Chlordane	0.2 U
8001-35-2	Toxaphene	10 U
12674-11-2	Aroclor-1016	1.0 U
53469-21-9	Aroclor-1242	1.0 U
12672-29-6	Aroclor-1248	1.0 U
11097-69-1	Aroclor-1254	1.0 U
11096-82-5	Aroclor-1260	1.0 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendate	**87%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477073 - 84

Lab Sample ID: 1207 Y
Sample Matrix: Sediments

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

Data Release Authorized: MW

Conc Level: Low
Instrument ID: FINN I
11/27/87

Amount analyzed: 5.94 gm
Percent Moisture: NA
pH: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	2.7 U
74-83-9	Bromomethane	3.5 U
75-01-4	Vinyl Chloride	3.1 U
75-00-3	Chloroethane	3.7 U
75-09-2	**Methylene Chloride**	**1.8 JB**
67-64-1	Acetone	9.8 U
75-15-0	Carbon Disulfide	1.7 U
75-35-4	1,1-Dichloroethene	3.8 U
75-34-3	1,1-Dichloroethane	1.7 U
156-60-5	Trans-1,2-Dichloroethene	2.3 U
67-66-3	Chloroform	2.1 U
107-06-2	1,2-Dichloroethane	1.9 U
78-93-3	2-Butanone	5.3 U
71-55-6	1,1,1-Trichloroethane	1.3 U
56-23-5	Carbon Tetrachloride	1.4 U
108-05-4	Vinyl Acetate	4.9 U
75-27-4	Bromodichloromethane	1.1 U

CAS Number		µg/Kg
78-87-5	1,2-Dichloropropane	1.3 U
10061-02-6	Trans-1,3-Dichloropropene	1.4 U
79-01-6	Trichloroethene	1.2 U
124-48-1	Dibromochloromethane	1.3 U
79-00-5	1,1,2-Trichloroethane	1.3 U
71-43-2	Benzene	1.4 U
10061-01-5	cis-1,3-Dichloropropene	1.4 U
110-75-8	2-Chloroethylvinylether	2.2 U
75-25-2	Bromoform	1.6 U
108-10-1	4-Methyl-2-Pentanone	3.0 U
591-78-6	2-Hexanone	1.6 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.8 U
108-88-3	Toluene	1.3 U
108-90-7	Chlorobenzene	1.1 U
100-41-4	Ethylbenzene	1.8 U
100-42-5	Styrene	2.3 U
	Total Xylenes	2.0 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	102.9%
Bromofluorobenzene	97.5%
d4-1,2-Dichloroethane	93.2%

*Surrogate recoveries indicate the validity of a given analysis

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477073 - 84

Lab Sample ID: 1207Y
Sample Matrix: Soils/Sediments

Date Release Authorized: Brian N. Beba

QC Report No: 1207-WD0E
Project No: Dryden
Date Received: 11/20/87

Dry weight extracted: 35.5 gm
Percent Moisture: 14.1%
pH: 5.9
Conc/Dilution: 1 to 1 (After GPC)

Date extracted: 11/23/87
Date Analyzed: 11/30/87
GPC Clean-up: YES (1 of 2)

CAS Number		ug/Kg
108-95-2	Phenol	22 U
111-44-4	bis(2-Chloroethyl)Ether	25 U
95-57-8	2-Chlorophenol	27 U
541-73-1	1,3-Dichlorobenzene	10 U
106-46-7	1,4-Dichlorobenzene	25 U
100-51-6	Benzyl Alcohol	29 U
95-50-1	1,2-Dichlorobenzene	6.7 U
95-48-7	2-Methylphenol	33 U
108-60-1	bis(2-chloroisopropyl)Ether	73 U
106-44-5	4-Methylphenol	17 U
621-64-7	N-Nitroso-Di-n-Propylamine	44 U
67-72-1	Hexachloroethane	44 U
98-95-3	Nitrobenzene	30 U
78-59-1	Isophorone	67 U
88-75-5	2-Nitrophenol	90 U
105-67-9	2,4-Dimethylphenol	79 U
65-85-0	Benzoic Acid	90 U
111-91-1	bis(2-Chloroethoxy)Methane	67 U
120-83-2	2,4-Dichlorophenol	90 U
120-82-1	1,2,4-Trichlorobenzene	51 U
91-20-3	Naphthalene	90 U
106-47-8	4-Chloroaniline	49 U
87-68-3	Hexachlorobutadiene	51 U
59-50-7	4-Chloro-3-Methylphenol	52 U
91-57-6	2-Methylnaphthalene	49 U
77-47-4	Hexachlorocyclopentadiene	48 U
88-06-2	2,4,6-Trichlorophenol	17 U
95-95-4	2,4,5-Trichlorophenol	20 U
91-58-7	2-Chloronaphthalene	4.1 U
88-74-4	2-Nitroaniline	90 U
131-11-3	Dimethyl Phthalate	27 U
208-96-8	Acenaphthylene	5.6 U
99-09-2	3-Nitroaniline	52 U
	Guaiacol	56 U

CAS Number		ug/Kg
83-32-9	Acenaphthene	32 U
51-28-5	2,4-Dinitrophenol	180 U
100-02-7	4-Nitrophenol	57 U
132-64-9	Dibenzofuran	47 U
121-14-2	2,4-Dinitrotoluene	27 U
606-20-2	2,6-Dinitrotoluene	76 U
84-66-2	**Diethylphthalate**	**75 B**
7005-72-3	4-Chlorophenyl-phenylether	40 U
86-73-7	Fluorene	33 U
100-01-6	4-Nitroaniline	100 U
534-52-1	4,6-Dinitro-2-Methylphenol	190 U
86-30-6	N-Nitrosodiphenylamine(1)	90 U
101-55-3	4-Bromophenyl-phenylether	36 U
118-74-1	Hexachlorobenzene	48 U
87-86-5	Pentachlorophenol	36 U
85-01-8	Phenanthrene	47 U
120-12-7	Anthracene	25 U
84-74-2	**Di-n-Butylphthalate**	**23 JB**
206-44-0	Fluoranthene	100 U
129-00-0	Pyrene	90 U
85-68-7	Butylbenzylphthalate	110 U
91-94-1	3,3'-Dichlorobenzidine	46 U
56-55-3	Benzo(a)Anthracene	71 U
117-81-7	**bis(2-Ethylhexyl)Phthalate**	**10 J**
218-01-9	Chrysene	18 U
117-84-0	Di-n-Octyl Phthalate	90 U
205-99-2	Benzo(b)Fluoranthene	28 U
207-08-9	Benzo(k)Fluoranthene	120 U
50-32-8	Benzo(a)Pyrene	12 U
193-39-5	Indeno(1,2,3-cd)Pyrene	49 U
53-70-3	Dibenz(a,h)Anthracene	57 U
191-24-2	Benzo(ghi)Perylene	52 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	74.4%
2-Fluorobiphenyl	81.9%
d14-p-Terphenyl	63.0%

***Acid surrogate recoveries**

d5-Phenol	80.8%
2-Fluorophenol	84.8%
2,4,6-Tribromophenol	82.2%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-73 ~ 84

Lab Sample ID: 1207 Y
Matrix: Soil

Data Release Authorized: Peter Kuykendall

Date Extracted: 11/23/87
Date Analyzed: 11/26/87
Conc/Dil Factor: 1:40
Dry Weight Analyzed: 35.46

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: YES
Alumina Cleanup: YES

CAS Number		ug/Kg
319-84-6	Alpha-BHC	10 U
319-85-7	Beta-BHC	10 U
319-86-8	Delta-BHC	10 U
58-89-9	Gamma-BHC (Lindane)	10 U
76-44-8	Heptachlor	10 U
309-00-2	Aldrin	10 U
1024-57-3	Heptachlor Epoxide	10 U
959-98-8	Endosulfan I	10 U
60-57-1	Dieldrin	20 U
72-55-9	4,4'-DDE	20 U
72-20-8	Endrin	20 U
33212-65-9	Endosulfan II	20 U
72-54-8	4,4'-DDD	20 U
1031-07-8	Endosulfan Sulfate	20 U
50-29-3	4,4'-DDT	20 U
72-43-5	Methoxychlor	20 U
53494-70-5	Endrin Ketone	20 U
57-74-9	Chlordane	40 U
8001-35-2	Toxaphene	2000 U
12674-11-2	Aroclor-1016	200 U
53469-21-9	Aroclor-1242	200 U
12672-29-6	Aroclor-1248	200 U
11097-69-1	Aroclor-1254	200 U
11096-82-5	Aroclor-1260	200 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendate	**75%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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ANICS ANALYSIS DATA SHEET - METHOD 624 **Sample No: 477074 -85**

Sample ID: 1207E
ple Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

Release Authorized: MW

Instrument ID: FINN III
Date Analyzed: 11/20/87
Conc/Dilution Factor: 1 to 1

S Number		µg/L
87-3	Chloromethane	4.0 U
83-9	Bromomethane	1.7 U
01-4	Vinyl Chloride	1.5 U
00-3	Chloroethane	1.6 U
09-2	**Methylene Chloride**	**2.2 B**
64-1	**Acetone**	**2.7 B**
15-0	Carbon Disulfide	5.0 U
35-4	1,1-Dichloroethene	3.0 U
34-3	1,1-Dichloroethane	2.0 U
60-5	Trans-1,2-Dichloroethene	1.4 U
66-3	Chloroform	1.2 U
06-2	1,2-Dichloroethane	1.8 U
93-3	**2-Butanone**	**1.4 JB**
55-6	1,1,1-Trichloroethane	0.5 U
23-5	Carbon Tetrachloride	3.2 U
05-4	Vinyl Acetate	2.9 U
27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	**Toluene**	**1.0 JB**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	1.3 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichloroethane	108%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477074 -85

Lab Sample ID: 1207E
Sample Matrix: Waters

QC Report No: '207-WDOE
Project No: Dryden
Date Received: 11/20/87

Date Release Authorized: Brian N. Baker

Date extracted: 11/23/87
Date Analyzed: 11/25/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1.9 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	75.3%
2-Fluorobiphenyl	75.3%
d14-p-Terphenyl	85.4%

***Acid surrogate recoveries**

d5-Phenol	30.7%
2-Fluorophenol	48.4%
2,4,6-Tribromophenol	95.0%

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RGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-74 - 85

Lab Sample ID: 1207 E
Matrix: Water

Date Extracted: 11/23/87
Date Analyzed: 11/26/87
Conc/Dil Factor: 1:10
Volume Extracted: 1 Liter

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: NO
Alumina Cleanup: YES

ata Release Authorized: Peter Kaplan

CAS Number		ug/L
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.1 U
72-55-9	4,4'-DDE	0.1 U
72-20-8	Endrin	0.1 U
33212-65-9	Endosulfan II	0.1 U
72-54-8	4,4'-DDD	0.1 U
1031-07-8	Endosulfan Sulfate	0.1 U
50-29-3	4,4'-DDT	0.1 U
72-43-5	Methoxychlor	0.1 U
53494-70-5	Endrin Ketone	0.1 U
57-74-9	Chlordane	0.2 U
8001-35-2	Toxaphene	10 U
12674-11-2	Aroclor-1016	1.0 U
53469-21-9	Aroclor-1242	1.0 U
12672-29-6	Aroclor-1248	1.0 U
11097-69-1	Aroclor-1254	1.0 U
11096-82-5	Aroclor-1260	1.0 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendate	**64%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477075 - 85

Lab Sample ID: 1207 Z
Sample Matrix: Sediments

Data Release Authorized: MW

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

Conc Level: Low
Instrument ID: FINN I
11/27/87

Amount analyzed: 5.78 gm
Percent Moisture: NA
pH: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	2.8 U
74-83-9	Bromomethane	3.6 U
75-01-4	Vinyl Chloride	3.2 U
75-00-3	Chloroethane	3.8 U
75-09-2	**Methylene Chloride**	**2.3 JB**
67-64-1	Acetone	10.0 U
75-15-0	Carbon Disulfide	1.7 U
75-35-4	1,1-Dichloroethene	3.9 U
75-34-3	1,1-Dichloroethane	1.7 U
156-60-5	Trans-1,2-Dichloroethene	2.3 U
67-66-3	Chloroform	2.2 U
107-06-2	1,2-Dichloroethane	2.0 U
78-93-3	2-Butanone	5.5 U
71-55-6	1,1,1-Trichloroethane	1.4 U
56-23-5	Carbon Tetrachloride	1.5 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.1 U

CAS Number		µg/Kg
78-87-5	1,2-Dichloropropane	1.4 U
10061-02-6	Trans-1,3-Dichloropropene	1.5 U
79-01-6	Trichloroethene	1.2 U
124-48-1	Dibromochloromethane	1.4 U
79-00-5	1,1,2-Trichloroethane	1.4 U
71-43-2	Benzene	1.5 U
10061-01-5	cis-1,3-Dichloropropene	1.5 U
110-75-8	2-Chloroethylvinylether	2.2 U
75-25-2	Bromoform	1.6 U
108-10-1	4-Methyl-2-Pentanone	3.1 U
591-78-6	2-Hexanone	1.6 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.8 U
108-88-3	Toluene	1.3 U
108-90-7	Chlorobenzene	1.1 U
100-41-4	Ethylbenzene	1.8 U
100-42-5	Styrene	2.3 U
	Total Xylenes	2.1 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	104%
Bromofluorobenzene	96.2%
d4-1,2-Dichloroethane	94.6%

*Surrogate recoveries indicate the validity of a given analysis

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477075 - 85

Lab Sample ID: 1207Z
Sample Matrix: Soils/Sediments

Date Release Authorized: Brian N. Bebee

QC Report No: 1207-WDOE
Project No: Dryden
Date Received: 11/20/87

Date extracted: 11/23/87
Date Analyzed: 11/30/87
GPC Clean-up: YES (1 of 2)

Dry weight extracted: 36.3 gm
Percent Moisture: 15.0%
pH: 6.5
Conc/Dilution: 1 to 1 (After GPC)

CAS Number		ug/Kg
108-95-2	Phenol	22 U
111-44-4	bis(2-Chloroethyl)Ether	24 U
95-57-8	2-Chlorophenol	27 U
541-73-1	1,3-Dichlorobenzene	10 U
106-46-7	1,4-Dichlorobenzene	25 U
100-51-6	Benzyl Alcohol	29 U
95-50-1	1,2-Dichlorobenzene	6.5 U
95-48-7	2-Methylphenol	33 U
39638-32-9	bis(2-chloroisopropyl)Ether	71 U
106-44-5	4-Methylphenol	16 U
621-64-7	N-Nitroso-Di-n-Propylamine	43 U
67-72-1	Hexachloroethane	43 U
98-95-3	Nitrobenzene	29 U
78-59-1	Isophorone	65 U
88-75-5	2-Nitrophenol	90 U
105-67-9	2,4-Dimethylphenol	77 U
65-85-0	Benzoic Acid	90 U
111-91-1	bis(2-Chloroethoxy)Methane	66 U
120-83-2	2,4-Dichlorophenol	90 U
120-82-1	1,2,4-Trichlorobenzene	50 U
91-20-3	Naphthalene	90 U
106-47-8	4-Chloroaniline	47 U
87-68-3	Hexachlorobutadiene	49 U
59-50-7	4-Chloro-3-Methylphenol	51 U
91-57-6	2-Methylnaphthalene	48 U
77-47-4	Hexachlorocyclopentadiene	47 U
88-06-2	2,4,6-Trichlorophenol	17 U
95-95-4	2,4,5-Trichlorophenol	20 U
91-58-7	2-Chloronaphthalene	4.0 U
88-74-4	2-Nitroaniline	90 U
131-11-3	Dimethyl Phthalate	27 U
208-96-8	Acenaphthylene	5.5 U
99-09-2	3-Nitroaniline	51 U
	Guaiacol	55 U

CAS Number		ug/Kg
83-32-9	Acenaphthene	31 U
51-28-5	2,4-Dinitrophenol	170 U
100-02-7	4-Nitrophenol	55 U
132-64-9	Dibenzofuran	45 U
121-14-2	2,4-Dinitrotoluene	27 U
606-20-2	2,6-Dinitrotoluene	74 U
84-66-2	**Diethylphthalate**	**56 B**
7005-72-3	4-Chlorophenyl-phenylether	39 U
86-73-7	Fluorene	32 U
100-01-6	4-Nitroaniline	100 U
534-52-1	4,6-Dinitro-2-Methylphenol	180 U
86-30-6	N-Nitrosodiphenylamine(1)	90 U
101-55-3	4-Bromophenyl-phenylether	35 U
118-74-1	Hexachlorobenzene	47 U
87-86-5	Pentachlorophenol	35 U
85-01-8	Phenanthrene	46 U
120-12-7	Anthracene	25 U
84-74-2	**Di-n-Butylphthalate**	**21 JB**
206-44-0	Fluoranthene	100 U
129-00-0	Pyrene	90 U
85-68-7	Butylbenzylphthalate	110 U
91-94-1	3,3'-Dichlorobenzidine	45 U
56-55-3	Benzo(a)Anthracene	69 U
117-81-7	bis(2-Ethylhexyl)Phthalate	110 U
218-01-9	Chrysene	17 U
117-84-0	Di-n-Octyl Phthalate	90 U
205-99-2	Benzo(b)Fluoranthene	28 U
207-08-9	Benzo(k)Fluoranthene	110 U
50-32-8	Benzo(a)Pyrene	12 U
193-39-5	Indeno(1,2,3-cd)Pyrene	48 U
53-70-3	Dibenz(a,h)Anthracene	56 U
191-24-2	Benzo(ghi)Perylene	51 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	80.9%
2-Fluorobiphenyl	84.0%
d14-p-Terphenyl	72.4%

***Acid surrogate recoveries**

d5-Phenol	87.1%
2-Fluorophenol	92.5%
2,4,6-Tribromophenol	84.9%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-75 .45

Lab Sample ID: 1207 Z
Matrix: Soil

Data Release Authorized: Peter Kaplan

Date Extracted: 11/23/87
Date Analyzed: 11/26/87
Conc/Dil Factor: 1:40
Dry Weight Analyzed: 36.26

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: YES
Alumina Cleanup: YES

CAS Number		ug/Kg
319-84-6	Alpha-BHC	10 U
319-85-7	Beta-BHC	10 U
319-86-8	Delta-BHC	10 U
58-89-9	Gamma-BHC (Lindane)	10 U
76-44-8	Heptachlor	10 U
309-00-2	Aldrin	10 U
1024-57-3	Heptachlor Epoxide	10 U
959-98-8	Endosulfan I	10 U
60-57-1	Dieldrin	20 U
72-55-9	4,4'-DDE	20 U
72-20-8	Endrin	20 U
33212-65-9	Endosulfan II	20 U
72-54-8	4,4'-DDD	20 U
1031-07-8	Endosulfan Sulfate	20 U
50-29-3	4,4'-DDT	20 U
72-43-5	Methoxychlor	20 U
53494-70-5	Endrin Ketone	20 U
57-74-9	Chlordane	40 U
8001-35-2	Toxaphene	2000 U
12674-11-2	Aroclor-1016	200 U
53469-21-9	Aroclor-1242	200 U
12672-29-6	Aroclor-1248	200 U
11097-69-1	Aroclor-1254	200 U
11096-82-5	Aroclor-1260	200 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendate	**73%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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RGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477076 -86

b Sample ID: 1207 F
mple Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

ta Release Authorized: MWL

Instrument ID: FINN III
Date Analyzed: 11/20/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
4-87-3	Chloromethane	4.0 U
4-83-9	Bromomethane	1.7 U
5-01-4	Vinyl Chloride	1.5 U
5-00-3	Chloroethane	1.6 U
5-09-2	**Methylene Chloride**	**2.6 B**
7-64-1	**Acetone**	**1.6 B**
5-15-0	Carbon Disulfide	5.0 U
5-35-4	1,1-Dichloroethene	3.0 U
5-34-3	1,1-Dichloroethane	2.0 U
56-60-5	Trans-1,2-Dichloroethene	1.4 U
7-66-3	Chloroform	1.2 U
07-06-2	1,2-Dichloroethane	1.8 U
8-93-3	2-Butanone	9.5 U
1-55-6	1,1,1-Trichloroethane	0.5 U
5-23-5	Carbon Tetrachloride	3.2 U
08-05-4	Vinyl Acetate	2.9 U
5-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	**Toluene**	**1.2 B**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	1.3 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	103%
Bromofluorobenzene	97.8%
d4-1,2-Dichloroethane	94.5%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477076 -86

Lab Sample ID: 1207F
Sample Matrix: Waters

QC Report No: 1207-WDOE
Project No: Dryden
Date Received: 11/20/87

Date Release Authorized: Brian N. Bebe

Date extracted: 11/23/87
Date Analyzed: 11/25/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1.9 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	74.4%
2-Fluorobiphenyl	69.2%
d14-p-Terphenyl	77.0%

***Acid surrogate recoveries**

d5-Phenol	30.9%
2-Fluorophenol	49.4%
2,4,6-Tribromophenol	101%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-76 -86

Lab Sample ID: 1207 F
Matrix: Water

Data Release Authorized: Peter Hyslop

Date Extracted: 11/23/87
Date Analyzed: 11/26/87
Conc/Dil Factor: 1:10
Volume Extracted: 1 Liter

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: NO
Alumina Cleanup: YES

CAS Number		ug/L
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.1 U
72-55-9	4,4'-DDE	0.1 U
72-20-8	Endrin	0.1 U
33212-65-9	Endosulfan II	0.1 U
72-54-8	4,4'-DDD	0.1 U
1031-07-8	Endosulfan Sulfate	0.1 U
50-29-3	4,4'-DDT	0.1 U
72-43-5	Methoxychlor	0.1 U
53494-70-5	Endrin Ketone	0.1 U
57-74-9	Chlordane	0.2 U
8001-35-2	Toxaphene	10 U
12674-11-2	Aroclor-1016	1.0 U
53469-21-9	Aroclor-1242	1.0 U
12672-29-6	Aroclor-1248	1.0 U
11097-69-1	Aroclor-1254	1.0 U
11096-82-5	Aroclor-1260	1.0 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendate	**54%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477077- 86

Lab Sample ID: 1207 AA
Sample Matrix: Sediments

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

Data Release Authorized: MW

Conc Level: Low
Instrument ID: FINN I
Date Analyzed: 11/27/87

Amount analyzed: 3.36 gm
Percent Moisture: NA
pH: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	4.8 U
74-83-9	Bromomethane	6.3 U
75-01-4	Vinyl Chloride	5.5 U
75-00-3	Chloroethane	6.5 U
75-09-2	**Methylene Chloride**	**7.4 B**
67-64-1	Acetone	17.3 U
75-15-0	Carbon Disulfide	3.0 U
75-35-4	1,1-Dichloroethene	6.7 U
75-34-3	1,1-Dichloroethane	3.0 U
156-60-5	Trans-1,2-Dichloroethene	4.0 U
67-66-3	Chloroform	3.7 U
107-06-2	1,2-Dichloroethane	3.4 U
78-93-3	2-Butanone	9.4 U
71-55-6	1,1,1-Trichloroethane	2.4 U
56-23-5	Carbon Tetrachloride	2.5 U
108-05-4	Vinyl Acetate	8.6 U
75-27-4	Bromodichloromethane	1.9 U

CAS Number		µg/Kg
78-87-5	1,2-Dichloropropane	2.4 U
10061-02-6	Trans-1,3-Dichloropropene	2.5 U
79-01-6	Trichloroethene	2.1 U
124-48-1	Dibromochloromethane	2.4 U
79-00-5	1,1,2-Trichloroethane	2.4 U
71-43-2	Benzene	2.5 U
10061-01-5	cis-1,3-Dichloropropene	2.5 U
110-75-8	2-Chloroethylvinylether	3.9 U
75-25-2	Bromoform	2.8 U
108-10-1	4-Methyl-2-Pentanone	5.4 U
591-78-6	2-Hexanone	2.8 U
127-18-4	Tetrachloroethene	1.8 U
79-34-5	1,1,2,2-Tetrachloroethane	3.1 U
108-88-3	Toluene	2.2 U
108-90-7	Chlorobenzene	1.9 U
100-41-4	Ethylbenzene	3.1 U
100-42-5	Styrene	4.0 U
	Total Xylenes	3.6 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	107%
Bromofluorobenzene	89.0%
d4-1,2-Dichloroethane	92.6%

*Surrogate recoveries indicate the validity of a given analysis

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477077 -86

Lab Sample ID: 1207AA
Sample Matrix. Soils/Sediments

Date Release Authorized: _____

QC Report No: 1207-WDOE
Project No: Dryden
Date Received: 11/20/87

Date extracted: 11/23/87
Date Analyzed: 11/30/87
GPC Clean-up: YES (1 of 2)

Dry weight extracted: 21.0 gm
Percent Moisture: 36.5%
pH: 6.3
Conc/Dilution: 1 to 1 (After GPC)

CAS Number		ug/Kg
108-95-2	Phenol	38 U
111-44-4	bis(2-Chloroethyl)Ether	41 U
95-57-8	2-Chlorophenol	46 U
541-73-1	1,3-Dichlorobenzene	16 U
106-46-7	1,4-Dichlorobenzene	43 U
100-51-6	Benzyl Alcohol	50 U
95-50-1	1,2-Dichlorobenzene	11 U
95-48-7	2-Methylphenol	56 U
39638-32-9	bis(2-chloroisopropyl)Ether	120 U
106-44-5	4-Methylphenol	28 U
621-64-7	N-Nitroso-Di-n-Propylamine	74 U
67-72-1	Hexachloroethane	74 U
98-95-3	Nitrobenzene	51 U
78-59-1	Isophorone	110 U
88-75-5	2-Nitrophenol	150 U
105-67-9	2,4-Dimethylphenol	130 U
65-85-0	Benzoic Acid	160 U
111-91-1	bis(2-Chloroethoxy)Methane	110 U
120-83-2	2,4-Dichlorophenol	160 U
120-82-1	1,2,4-Trichlorobenzene	87 U
91-20-3	Naphthalene	150 U
106-47-8	4-Chloroaniline	82 U
87-68-3	Hexachlorobutadiene	85 U
59-50-7	4-Chloro-3-Methylphenol	87 U
91-57-6	2-Methylnaphthalene	82 U
77-47-4	Hexachlorocyclopentadiene	80 U
88-06-2	2,4,6-Trichlorophenol	29 U
95-95-4	2,4,5-Trichlorophenol	34 U
91-58-7	2-Chloronaphthalene	6.8 U
88-74-4	2-Nitroaniline	150 U
131-11-3	Dimethyl Phthalate	46 U
208-96-8	Acenaphthylene	9.4 U
99-09-2	3-Nitroaniline	88 U
	Guaiacol	95 U

CAS Number		ug/Kg
83-32-9	Acenaphthene	53 U
51-28-5	2,4-Dinitrophenol	300 U
100-02-7	4-Nitrophenol	95 U
132-64-9	Dibenzofuran	78 U
121-14-2	2,4-Dinitrotoluene	46 U
606-20-2	2,6-Dinitrotoluene	130 U
84-66-2	Diethylphthalate	37 U
7005-72-3	4-Chlorophenyl-phenylether	67 U
86-73-7	Fluorene	55 U
100-01-6	4-Nitroaniline	170 U
534-52-1	4,6-Dinitro-2-Methylphenol	310 U
86-30-6	N-Nitrosodiphenylamine(1)	150 U
101-55-3	4-Bromophenyl-phenylether	61 U
118-74-1	Hexachlorobenzene	82 U
87-86-5	Pentachlorophenol	60 U
85-01-8	Phenanthrene	79 U
120-12-7	Anthracene	43 U
84-74-2	Di-n-Butylphthalate	72 U
206-44-0	Fluoranthene	170 U
129-00-0	Pyrene	150 U
85-68-7	Butylbenzylphthalate	190 U
91-94-1	3,3'-Dichlorobenzidine	77 U
56-55-3	Benzo(a)Anthracene	120 U
117-81-7	bis(2-Ethylhexyl)Phthalate	180 U
218-01-9	Chrysene	30 U
117-84-0	Di-n-Octyl Phthalate	150 U
205-99-2	Benzo(b)Fluoranthene	47 U
207-08-9	Benzo(k)Fluoranthene	200 U
50-32-8	Benzo(a)Pyrene	20 U
193-39-5	Indeno(1,2,3-cd)Pyrene	82 U
53-70-3	Dibenz(a,h)Anthracene	96 U
191-24-2	Benzo(ghi)Perylene	87 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	81.6%
2-Fluorobiphenyl	87.9%
d14-p-Terphenyl	106%

***Acid surrogate recoveries**

d5-Phenol	87.3%
2-Fluorophenol	86.9%
2,4,6-Tribromophenol	93.0%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: 4770-77 - 86

Lab Sample ID: 1207 AA
Matrix: Soil

Data Release Authorized: Peter Kuykendall

Date Extracted: 11/23/87
Date Analyzed: 11/26/87
Conc/Dil Factor: 1:40
Dry Weight Analyzed: 21.04

QC Report No.: 1207 WDOE
VTSR: 11/20/87
GPC Cleanup: YES
Alumina Cleanup: YES

CAS Number		ug/Kg
319-84-6	Alpha-BHC	10 U
319-85-7	Beta-BHC	10 U
319-86-8	Delta-BHC	10 U
58-89-9	Gamma-BHC (Lindane)	10 U
76-44-8	Heptachlor	10 U
309-00-2	Aldrin	10 U
1024-57-3	Heptachlor Epoxide	10 U
959-98-8	Endosulfan I	10 U
60-57-1	Dieldrin	20 U
72-55-9	4,4'-DDE	20 U
72-20-8	Endrin	20 U
33212-65-9	Endosulfan II	20 U
72-54-8	4,4'-DDD	20 U
1031-07-8	Endosulfan Sulfate	20 U
50-29-3	4,4'-DDT	20 U
72-43-5	Methoxychlor	20 U
53494-70-5	Endrin Ketone	20 U
57-74-9	Chlordane	40 U
8001-35-2	Toxaphene	2000 U
12674-11-2	Aroclor-1016	200 U
53469-21-9	Aroclor-1242	200 U
12672-29-6	Aroclor-1248	200 U
11097-69-1	Aroclor-1254	200 U
11096-82-5	Aroclor-1260	200 U

* Pesticide Surrogate Recoveries

Dibutylchlorendate	68%

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: 477078 Transport Blank

Lab Sample ID: 1207 P
Sample Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: Dryden
Date Received: 11/20/87

Data Release Authorized: _____

Instrument ID: FINN III
Date Analyzed: 11/23/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
74-87-3	Chloromethane	4.0 U
74-83-9	Bromomethane	1.7 U
75-01-4	Vinyl Chloride	1.5 U
75-00-3	Chloroethane	1.6 U
75-09-2	**Methylene Chloride**	**17 B**
67-64-1	**Acetone**	**7.5 B**
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	3.0 U
75-34-3	1,1-Dichloroethane	2.0 U
156-60-5	Trans-1,2-Dichloroethene	1.4 U
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.8 U
78-93-3	**2-Butanone**	**23 B**
71-55-6	1,1,1-Trichloroethane	0.5 U
56-23-5	Carbon Tetrachloride	3.2 U
108-05-4	Vinyl Acetate	2.9 U
75-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	**Toluene**	**7.1 B**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	1.3 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	93.6%
Bromofluorobenzene	89.5%
d4-1,2-Dichloroethane	102%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477078 Transport Blank

Lab Sample ID: 1207P
Sample Matrix: Waters

QC Report No: 1207-WDOE
Project No: Dryden
Date Received: 11/20/87

Date Release Authorized: _____

Date extracted: 11/23/87
Date Analyzed: 11/27/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	2.0 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	75.6%
2-Fluorobiphenyl	69.8%
d14-p-Terphenyl	74.3%

***Acid surrogate recoveries**

d5-Phenol	31.1%
2-Fluorophenol	47.0%
2,4,6-Tribromophenol	76.8%

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: 477079 RE Transfer Blank

Lab Sample ID: 1207QR
Sample Matrix: Waters

QC Report No: 1207-WDOE
Project No: Gobers/Cashmere/Dryden
Date Received: 11/20/87

Date Release Authorized: Tom N. Baker

Date extracted: 12/10/87
Date Analyzed: 12/16/87

Sample Volume: 530 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.7 U
111-44-4	bis(2-Chloroethyl)Ether	0.8 U
95-57-8	2-Chlorophenol	0.9 U
541-73-1	1,3-Dichlorobenzene	0.3 U
106-46-7	1,4-Dichlorobenzene	0.8 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	0.2 U
95-48-7	2-Methylphenol	1.1 U
39638-32-9	bis(2-chloroisopropyl)Ether	2.4 U
106-44-5	4-Methylphenol	0.6 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.5 U
67-72-1	Hexachloroethane	1.5 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	2.2 U
88-75-5	2-Nitrophenol	3.0 U
105-67-9	2,4-Dimethylphenol	2.6 U
65-85-0	Benzoic Acid	3.1 U
111-91-1	bis(2-Chloroethoxy)Methane	2.2 U
120-83-2	2,4-Dichlorophenol	3.1 U
120-82-1	1,2,4-Trichlorobenzene	1.7 U
91-20-3	Naphthalene	3.0 U
106-47-8	4-Chloroaniline	1.6 U
87-68-3	Hexachlorobutadiene	1.7 U
59-50-7	4-Chloro-3-Methylphenol	1.7 U
91-57-6	2-Methylnaphthalene	1.6 U
77-47-4	Hexachlorocyclopentadiene	1.6 U
88-06-2	2,4,6-Trichlorophenol	0.6 U
95-95-4	2,4,5-Trichlorophenol	0.7 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	3.0 U
131-11-3	Dimethyl Phthalate	0.9 U
208-96-8	Acenaphthylene	0.2 U
99-09-2	3-Nitroaniline	1.7 U

CAS Number		µg/L
83-32-9	Acenaphthene	1.1 U
51-28-5	2,4-Dinitrophenol	6.0 U
100-02-7	4-Nitrophenol	1.9 U
132-64-9	Dibenzofuran	1.6 U
121-14-2	2,4-Dinitrotoluene	0.9 U
606-20-2	2,6-Dinitrotoluene	2.5 U
84-66-2	Diethylphthalate	0.7 U
7005-72-3	4-Chlorophenyl-phenylether	1.3 U
86-73-7	Fluorene	1.1 U
100-01-6	4-Nitroaniline	3.5 U
534-52-1	4,6-Dinitro-2-Methylphenol	6.2 U
86-30-6	N-Nitrosodiphenylamine(1)	3.0 U
101-55-3	4-Bromophenyl-phenylether	1.2 U
118-74-1	Hexachlorobenzene	1.6 U
87-86-5	Pentachlorophenol	1.2 U
85-01-8	Phenanthrene	1.6 U
120-12-7	Anthracene	0.9 U
84-74-2	Di-n-Butylphthalate	1.4 U
206-44-0	Fluoranthene	3.3 U
129-00-0	Pyrene	3.0 U
85-68-7	Butylbenzylphthalate	3.8 U
91-94-1	3,3'-Dichlorobenzidine	1.5 U
56-55-3	Benzo(a)Anthracene	2.4 U
117-81-7	bis(2-Ethylhexyl)Phthalate	3.6 U
218-01-9	Chrysene	0.6 U
117-84-0	Di-n-Octyl Phthalate	3.1 U
205-99-2	Benzo(b)Fluoranthene	0.9 U
207-08-9	Benzo(k)Fluoranthene	3.9 U
50-32-8	Benzo(a)Pyrene	0.4 U
193-39-5	Indeno(1,2,3-cd)Pyrene	1.6 U
53-70-3	Dibenz(a,h)Anthracene	1.9 U
191-24-2	Benzo(ghi)Perylene	1.7 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	73.4%
2-Fluorobiphenyl	68.5%
d14-p-Terphenyl	91.9%

***Acid surrogate recoveries**

d5-Phenol	47.7%
2-Fluorophenol	59.0%
2,4,6-Tribromophenol	84.2%

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: Method Blank RE

Lab Sample ID: 1207mbr
Sample Matrix: Waters

QC Report No: 1207-WDOE
Project No: Gobers/Cashmere/Dryden
Date Received: 11/20/87

Date Release Authorized: Brian N. Gober

Date extracted: 12/10/87
Date Analyzed: 12/16/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1.9 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	78.6%
2-Fluorobiphenyl	69.7%
d14-p-Terphenyl	84.0%

***Acid surrogate recoveries**

d5-Phenol	36.6%
2-Fluorophenol	54.5%
2,4,6-Tribromophenol	94.4%

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: METHOD BLANK

Lab Sample ID: MB1123
Sample Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: NR
Date Received: 11/20/87

Data Release Authorized: _____

Instrument ID: FINN III
Date Analyzed: 11/23/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
74-87-3	Chloromethane	4.0 U
74-83-9	Bromomethane	1.7 U
75-01-4	Vinyl Chloride	1.5 U
75-00-3	Chloroethane	1.6 U
75-09-2	**Methylene Chloride**	**6.6 U**
67-64-1	**Acetone**	**2.3 U**
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	3.0 U
75-34-3	1,1-Dichloroethane	2.0 U
156-60-5	Trans-1,2-Dichloroethene	1.4 U
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.8 U
78-93-3	**2-Butanone**	**1.6 J**
71-55-6	1,1,1-Trichloroethane	0.5 U
56-23-5	Carbon Tetrachloride	3.2 U
108-05-4	Vinyl Acetate	2.9 U
75-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	**Toluene**	**0.2 J**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	1.3 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	103%
Bromofluorobenzene	95.5%
d4-1,2-Dichloroethane	84.4%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: METHOD BLANK

Lab Sample ID: MB1123N
Sample Matrix: Waters

Data Release Authorized: _____

ARI Job No./Client: 1207 / WDOE
Project No: NR
Date Received: 11/20/87

Instrument ID: FINN III
Date Analyzed: 11/23/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
74-87-3	Chloromethane	4.0 U
74-83-9	Bromomethane	1.7 U
75-01-4	Vinyl Chloride	1.5 U
75-00-3	Chloroethane	1.6 U
75-09-2	**Methylene Chloride**	**4.2**
67-64-1	**Acetone**	**0.8 J**
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	3.0 U
75-34-3	1,1-Dichloroethane	2.0 U
156-60-5	Trans-1,2-Dichloroethene	1.4 U
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.8 U
78-93-3	**2-Butanone**	**1.1 J**
71-55-6	1,1,1-Trichloroethane	0.5 U
56-23-5	Carbon Tetrachloride	3.2 U
108-05-4	Vinyl Acetate	2.9 U
75-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	Toluene	1.2 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	1.3 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	93.3%
Bromofluorobenzene	88.7%
d4-1,2-Dichloroethane	100%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: METHOD BLANK

Lab Sample ID: MB1120
Sample Matrix: Waters

ARI Job No./Client: 1207 / WDOE
Project No: NR
Date Received: 11/20/87

Data Release Authorized: _____

Instrument ID: FINN III
Date Analyzed: 11/20/87
Conc/Dilution Factor: 1 to 1

CAS Number		µg/L
74-87-3	Chloromethane	4.0 U
74-83-9	Bromomethane	1.7 U
75-01-4	Vinyl Chloride	1.5 U
75-00-3	Chloroethane	1.6 U
75-09-2	**Methylene Chloride**	**2.0**
67-64-1	**Acetone**	**0.9 J**
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	3.0 U
75-34-3	1,1-Dichloroethane	2.0 U
156-60-5	Trans-1,2-Dichloroethene	1.4 U
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.8 U
78-93-3	**2-Butanone**	**1.5 J**
71-55-6	1,1,1-Trichloroethane	0.5 U
56-23-5	Carbon Tetrachloride	3.2 U
108-05-4	Vinyl Acetate	2.9 U
75-27-4	Bromodichloromethane	1.5 U

CAS Number		µg/L
78-87-5	1,2-Dichloropropane	0.9 U
10061-02-6	Trans-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	2.3 U
71-43-2	Benzene	0.8 U
10061-01-5	cis-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	0.9 U
108-10-1	4-Methyl-2-Pentanone	3.8 U
591-78-6	2-Hexanone	8.1 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	3.2 U
108-88-3	**Toluene**	**0.7 J**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.5 U
100-42-5	Styrene	0.6 U
	Total Xylenes	**0.6 J**

***Volatile Organic Surrogate Recoveries**

d8-Toluene	97.5%
Bromofluorobenzene	98.2%
d4-1,2-Dichloroethane	98.5%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
NR	Analysis not required
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 625

Sample No: Method Blank

Lab Sample ID: 1207MB
Sample Matrix: Waters

QC Report No: 1207-WDOE
Project No: Dryden
Date Received: 11/20/87

Date Release Authorized: Brian N. Beh

Date extracted: 11/23/87
Date Analyzed: 11/24/87

Sample Volume: 1000 mls
Final extract Volume: 1 mls

CAS Number		µg/L
108-95-2	Phenol	0.4 U
111-44-4	bis(2-Chloroethyl)Ether	0.4 U
95-57-8	2-Chlorophenol	0.5 U
541-73-1	1,3-Dichlorobenzene	0.2 U
106-46-7	1,4-Dichlorobenzene	0.4 U
100-51-6	Benzyl Alcohol	0.5 U
95-50-1	1,2-Dichlorobenzene	0.1 U
95-48-7	2-Methylphenol	0.6 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.3 U
106-44-5	4-Methylphenol	0.3 U
621-64-7	N-Nitroso-Di-n-Propylamine	0.8 U
67-72-1	Hexachloroethane	0.8 U
98-95-3	Nitrobenzene	0.5 U
78-59-1	Isophorone	1.2 U
88-75-5	2-Nitrophenol	1.6 U
105-67-9	2,4-Dimethylphenol	1.4 U
65-85-0	Benzoic Acid	1.7 U
111-91-1	bis(2-Chloroethoxy)Methane	1.2 U
120-83-2	2,4-Dichlorophenol	1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.9 U
91-20-3	Naphthalene	1.6 U
106-47-8	4-Chloroaniline	0.9 U
87-68-3	Hexachlorobutadiene	0.9 U
59-50-7	4-Chloro-3-Methylphenol	0.9 U
91-57-6	2-Methylnaphthalene	0.9 U
77-47-4	Hexachlorocyclopentadiene	0.8 U
88-06-2	2,4,6-Trichlorophenol	0.3 U
95-95-4	2,4,5-Trichlorophenol	0.4 U
91-58-7	2-Chloronaphthalene	0.1 U
88-74-4	2-Nitroaniline	1.6 U
131-11-3	Dimethyl Phthalate	0.5 U
208-96-8	Acenaphthylene	0.1 U
99-09-2	3-Nitroaniline	0.9 U

CAS Number		µg/L
83-32-9	Acenaphthene	0.6 U
51-28-5	2,4-Dinitrophenol	3.2 U
100-02-7	4-Nitrophenol	1.0 U
132-64-9	Dibenzofuran	0.8 U
121-14-2	2,4-Dinitrotoluene	0.5 U
606-20-2	2,6-Dinitrotoluene	1.3 U
84-66-2	Diethylphthalate	0.4 U
7005-72-3	4-Chlorophenyl-phenylether	0.7 U
86-73-7	Fluorene	0.6 U
100-01-6	4-Nitroaniline	1.8 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.3 U
86-30-6	N-Nitrosodiphenylamine(1)	1.6 U
101-55-3	4-Bromophenyl-phenylether	0.6 U
118-74-1	Hexachlorobenzene	0.9 U
87-86-5	Pentachlorophenol	0.6 U
85-01-8	Phenanthrene	0.8 U
120-12-7	Anthracene	0.5 U
84-74-2	Di-n-Butylphthalate	0.8 U
206-44-0	Fluoranthene	1.8 U
129-00-0	Pyrene	1.6 U
85-68-7	Butylbenzylphthalate	2.0 U
91-94-1	3,3'-Dichlorobenzidine	0.8 U
56-55-3	Benzo(a)Anthracene	1.3 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1.9 U
218-01-9	Chrysene	0.3 U
117-84-0	Di-n-Octyl Phthalate	1.6 U
205-99-2	Benzo(b)Fluoranthene	0.5 U
207-08-9	Benzo(k)Fluoranthene	2.1 U
50-32-8	Benzo(a)Pyrene	0.2 U
193-39-5	Indeno(1,2,3-cd)Pyrene	0.9 U
53-70-3	Dibenz(a,h)Anthracene	1.0 U
191-24-2	Benzo(ghi)Perylene	0.9 U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	87.1%
2-Fluorobiphenyl	83.3%
d14-p-Terphenyl	92.0%

***Acid surrogate recoveries**

d5-Phenol	44.8%
2-Fluorophenol	67.2%
2,4,6-Tribromophenol	79.8%

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ORGANICS ANALYSIS DATA SHEET - Method 608

Sample No: Method Blank-Water

Lab Sample ID: 1207 MBW
Matrix: Water

Data Release Authorized:

Date Extracted: 11/23/87
Date Analyzed: 11/25/87
Conc/Dil Factor: 1:10
Volume Extracted: 1 Liter

QC Report No.: 1207 WDOE
YTSR: 11/20/87
GPC Cleanup: NO
Alumina Cleanup: YES

CAS Number		ug/L
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.1 U
72-55-9	4,4'-DDE	0.1 U
72-20-8	Endrin	0.1 U
33212-65-9	Endosulfan II	0.1 U
72-54-8	4,4'-DDD	0.1 U
1031-07-8	Endosulfan Sulfate	0.1 U
50-29-3	4,4'-DDT	0.1 U
72-43-5	Methoxychlor	0.1 U
53494-70-5	Endrin Ketone	0.1 U
57-74-9	Chlordane	0.2 U
8001-35-2	Toxaphene	10 U
12674-11-2	Aroclor-1016	1.0 U
53469-21-9	Aroclor-1242	1.0 U
12672-29-6	Aroclor-1248	1.0 U
11097-69-1	Aroclor-1254	1.0 U
11096-82-5	Aroclor-1260	1.0 U

*** Pesticide Surrogate Recoveries**

Dibutylchlorendate	**49%**

Data Qualifier

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

LABORATORY QUALITY ASSURANCE

The laboratory has a continuing Quality Assurance/Quality Control (QA/QC) program to assure that the data reported by the laboratory are as accurate as possible. The QA/QC program consists of both inhouse matrix spikes and laboratory blanks along with quarterly performance evaluation samples.

ORGANICS

Quality Assurance in the Organic unit consists of running laboratory blanks and duplicate matrix spike samples with each set of sample matrices extracted. The acid/base-neutral, pesticides and volatiles have "surrogate spikes" added to every sample extracted to evaluate extraction performance as put forth in EPA's Contract Laboratory Program (CLP)*. The Organic Analysis section also participates in the following performance evaluation programs.

a) Water Supply Series (Drinking Water)
   WS Samples:
   Pesticides, Herbicides, Trihalomethanes, VOA, Carbon, Benzene

b) Water Pollution Series (Water Quality Programs)
   WP Samples:
   PCB's, Pesticides, Purgeable Aromatic, VOA, Oil and Grease, Phenols

c) SW Solid Waste Series (RCRW)
   SW Samples:
   Acid/Base-Neutrals, Pesticides, VOA, PCB's

d) QB Superfund (Hazardous Waste) Series
   Acid/Base-Neutrals, Pesticides, PCB's, VOA

Standard Reference Materials, (SRM's) will be analyzed upon request when suitable materials are available.

* USEPA Contract Laboratory Program, Statement of Work for Organic Analysis, Multi-media, Multi-concentration

MANCHESTER LABORATORY QUALITY ASSURANCE

Parameter	Matrix Spike	Multiple Calibrants	Dupl.	Internal Ck Stds.	External Ck Stds.	WP WS EPA Eval. Stds.	NCASI
Acidity			10%	10%		2/yr.	
Alkalinity			10%	10%		2/yr.	
BOD	100%		100%	100%		2/yr.	2/yr.
COD		X	10%	10%		2/yr.	
Conductivity			10%	10%		2/yr.	
Chloride		X	10%	10%		2/yr.	
Chlorophyll			10%		10%		
Color			10%	10%		2/yr.	2/yr.
Cyanide	10%	X	10%	10%	10%	2/yr.	
Fluoride	10%	X	10%	10%	10%	2/yr.	
Hardness			10%	10%		2/yr.	
MBAS			100%	100%			
Microbiology	1%		90%				
Nutrients	3%	X	10%	5%	1%	2/yr.	
Oil & Grease					10%	2/yr.	
pH		X	20%		20%	2/yr.	2/yr.
Phenolics	10%	X	10%	10%	10%	2/yr.	
Solids			30%		5%	2/yr.	
Salinity			20%				
Sulfate		X	10%	10%		2/yr.	
Tannin & Lignin			100%	100%			
TOC	10%	X	10%	20%	10%	2/yr.	
Turbidity		X	10%		10%	2/yr.	

The variety and number of Quality Assurance samples analyzed by the laboratory have major impact on the laboratory workload. Additional or special QA samples will only be accepted after approval by the laboratory supervisor.

Not all of the QA sample data are routinely reported with the samples, however, all of the QA sample results are available upon request.

DH/cm
12-4-86

ANDREA BEATTY RINIKER
Director

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

June 1, 1987

Lloyd E. Berry, P.E.
Chelan County Public Works
Court House
Wenatchee, WA 98801

Dear Mr. Berry:

As per our recent telephone conversation, I now want to confirm our scheduled meeting on Tuesday, June 9, 1987, I will be at the Dryden Landfill at 11:00 a.m.

I am enclosing a copy of the EPA Site Inspection Form 2070-13 as a work copy for your own use. You will receive a copy of the entire report when it has been through our review process, and finalized by the EPA.

You can be most helpful to me by completing, to the best of your knowledge/ability, sections 4.II and 7 through 11, where applicable. I shall be able to gather all the other required information for the remaining sections from our own files, and other inquiries.

Mr. Bob Kievit of EPA Washington Operations Office in Olympia will assist me in the collection of any appropriate environmental samples. You shall be allowed opportunity for sample splits at that time.

This investigation is being conducted under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act, Section 104, Parts (d)(1) and (e)(1), and of the Revised Code of Washington, Section 70.105A.060, Parts (1) and (2). A copy of excerpts of those statutes is enclosed.

Also enclosed is a "Consent for Access to Property" form. Please sign this form and present it to me on Tuesday to document that you provided permission to access for this investigation, and whether or not you wish sample splits.

I look forward to meeting with you and following up on the preliminary assessment recommendations for the Dryden Landfill Site.

Please contact me at telephone (206) 438-3016 if you have any questions concerning the above.

Sincerely,

Michael J. Spencer

Michael J. Spencer
Hazardous Waste Cleanup Program

MJS:ra
Enclosures

cc: Dennis Bowhay, Ecology
Bob Kievit, EPA
Ann Jensen, Chelan-Douglas
County Health District

ANDREA BEATTY RINIKER
Director

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

June 1, 1987

Lloyd E. Berry, P.E.
Chelan County Public Works
Court House
Wenatchee, WA 98801

CONSENT FOR ACCESS TO PROPERTY

Property Address: Chelan Co. Dryden Landfill
State Route 2
Dryden, WA 98801

I hereby give my consent to officers, employees, contractors, and persons acting at the request of the Washington State Department of Ecology (Ecology) to enter and have access to my property located at the above property address for the following purposes:

Inspect for hazardous releases and collect samples as appropriate.

Permission for access commences on June 9, 1987

JUNE-9, 1987
Date

Signature

Ecology is requested to provide me a duplicate of any sample(s) collected at the above property address during the time of access. I will supply the container(s) to receive the duplicate sample(s).

Date

Signature

Ecology is not requested to provide me a duplicate of any sample(s) collected at the above address during the time of access.

JUNE 9, 1987
Date

Signature

ANDREA BEATTY RINIKER
Director

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

TO: Chelan County Dryden Landfill Files

FROM: Michael J. Spencer MJS

SUBJECT: Phase I Site Inspection

DATE: June 25, 1987

I conducted a PA/SI Phase I Inspection (SI) at the Chelan County Dryden Landfill site in Dryden during the morning of June 9, 1987. Bob Kievit, EPA Washington Operations Office, Olympia, accompanied me to assist in sample collection.

We arrived at the landfill at 10:45 a.m., ahead of our contact from Chelan County, Mr. Lloyd Berry, so drove on back down the highway to the bridge across the Wenatchee River to observe and photograph the steep cliff from the landfill site down to the river. It is at the base of this cliff that leachate had been previously observed seeping into the river water.

We then met with Mr. Berry onsite at 11:00 a.m. and reviewed the overall situation as to why the SI was being conducted and how the eventual outcome will be determined.

Mr. Berry made no bones about the county's financial situation in dealing with the proposed closure of this landfill and conversion to a transfer station. The county has its own idea on how to do it, which they feel would be quite acceptable, however, this does not meet Ecology's Minimum Functional Standards.

(Fred Neuman (sp?) was involved earlier with the comprehensive solid waste plan for the closure of many Chelan County landfills, but they received only part of the grant and closed just a few.)

There were 10-15 years of dumping onsite here with no real supervision. There was lots of apple processing wastes (mostly organic), paper, and plastic.

Seepage was allowed until 1980-81 or so.

We walked from the entrance gate area around to the back (west, south) side of the landfill. Mr. Berry pointed out where the upper and lower irrigation ditches run and how they were lined recently and/or replaced in sections by steel pipes.

The original monitoring well was pointed out. Refuse is about 50-60' deep in the area, and additional length of pipe was recently welded onto the already (about) 50' deep well.

Mr. Berry described how he got hold of an old DOT aerial photograph and was able to determine the original contours. The landfill will be covered back to these.

Bob and I hiked up to the lower irrigation ditch and observed how the overflow spillway mechanism operated. It appeared that the ditch was indeed either concrete-lined, or replaced by approximately four-foot diameter steel pipe for most of the distance as it passed around the backside of the landfill.

We then climbed down the bank to the river's edge and inspected for any leachate seeps downriver along the base of the cliff. No recent signs were seen, although a few rocks appeared to be have been discolored at some time in the past - a dark red color.

There appeared to be an abundance of algae growth along the river's edge just below the landfill area and I suspected this may be due to influence of infiltrate from the landfill. However, further inspection revealed approximately the same amounts of algae material further upriver all the way to the bridge.

No attempt was made to sample this river water, as it was raging by in full force, although not right up at previous high water marks.

We tried to determine the water level in the old monitoring well and found it to be dry. Mr. Berry said it never seemed to have that much water in it any more since they lined the irrigation ditch.

The three newer monitoring wells onsite were installed by contractors for the county and are sampled by the county health department. They all were locked, and I felt it best to obtain Ann Jensen's (of the health department) permission prior to obtaining any sample.

Stopped by the health department and found out Ann would be in the next a.m. Called from ALCOA and she said to get keys from landfill attendant and try to sample wells if possible.

Wednesday, June 10, 1987

As it turned out, the wells all had 2 inch PVC pipes inside a large 4 inch steel casing, thus couldn't get any sample with the equipment we had. We did obtain the following information.

Well	Depth (feet)	Water Level (feet from ground surface)
Nearest to entrance	53	40
Middle well	134	116
Nearest to river	150	136

While coming back from these wells, we observed up to a dozen or so empty containers (volume of 250 lbs.) which previously held Basazal Violet 47L. Some was spilled on ground.

Need to get a 1 3/4 inch bailer to get samples from these wells. Should do a full scan of priority pollutants.

MJS:pb

cc: Marc Crooks, Ecology
Dennis Bowhay, CRO

DREA BEATTY RINIKER
Director

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

M E M O R A N D U M

December 1, 1987

TO: Chelan County Dryden Landfill Files

FROM: Michael J. Spencer MJS

SUBJECT: Phase II Site Inspection

I conducted a PA/SI Phase II Site Inspection at the Chelan County Dryden Landfill in Dryden during the morning of November 18, 1987. Fred Gardner and Tom Harris, PA/SI Unit, accompanied me to assist in sample collection.

We arrived on-site at 10:00 a.m., having first spoken to Lloyd Berry of Chelan County earlier in the morning concerning our sampling plans. He had already signed a consent for access form during the Phase I SI (6/9/87), with notification made that sample splits were not required. Sampling was not carried out at that time due to the river water level not being low enough to observe any leachate contamination, and lack of small enough bailers to sample the on-site monitoring wells.

A drive-by inspection several weeks earlier showed that the water level of the Wenatchee River was low enough to obtain visual documentation that leachate, or rather leach-contaminated ground water, was entering the river at the base of the cliff at the southeastern, downgradient, edge of the landfill.

Weather: partly overcast, no wind, 44°F.

The monitoring wells were sampled first. The well nearest to the landfill entrance was determined to be 57.5 feet deep, with a static water level at 42 feet, thus for a two-inch well containing about 2.5 gallons of water, or eight bailer volumes. We removed eight volumes, checked water level, removed eight more, and checked water level again. Both times it was at 42 feet. So four additional volumes were removed and sample MJS081 was collected at 10:00 a.m.

The well nearest to the river was 176 feet deep, with a water level recorded at 143 feet, for a volume of about 5.5 gallons, or 18 bailer volumes. Nine volumes were removed, water level checked, nine more, and a second check again showed the water level around 143 feet. A sample, MJS083, was collected at this stage, (11:30 a.m.) with only one purging, due to effort involved, and lack of time.

A second downgradient well in between was sampled after purging twice. The depth was 135 feet, water level at 125 feet. Sample MJS082 was

collected at 12:20 p.m. This well is in between the first two sampled, and somewhat to the northeast.

The river was sampled just under the surface along the right bank about 50 feet upstream of the highway bridge (sample MJS084 at 1:15). A sediment sample, MJS84, was collected as a composite of the upper two inches of river sediment at that location.

There was a definite flow of ground water as a small seep, exiting along the bank of the river about 50 feet below the highway bridge. This drained from the flat area between the northeast edge of the landfill and the highway. There was some evidence of excessive algal growth in the vicinity, indicating possible nutrient enrichment. A small hole was excavated at this seepage, collecting sediment sample MJS85 at the same time, and water sample MJS085 was taken at 1:30 p.m.

Further down the river, at the base of the cliff at the east end of the landfill area, there was sufficient evidence of enrichment in local surface waters to suspect presence of leachate contamination, relative to upstream conditions. Water sample MJS086 and sediment sample MJS86 were collected at 1:50 p.m. from a visible flow of water emanating at a level distinctly upgradient of the river water level.

All samples will be analyzed for a full scan of priority pollutants by Ecology Manchester Laboratory.

MJS:ra

cc: Dennis Bowhay, Ecology, CRO
Kirk Cook, Ecology
Bob Kievit, EPA WOO

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Chelan County Dryden Landfill	State Route 2				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Dryden	WA	98801	Chelan	007	04

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
47 32 45.0	120 34 25.0	☐ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☒ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
6 9 87 11 18 87 MONTH DAY YEAR	☒ ACTIVE ☐ INACTIVE	1960 (BEGINNING YEAR) Present (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☒ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Michael J. Spencer	Environmentalist	Ecology PA/SI	( ) 206 438-3016
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Bob Kievit (Phase I only)	Environ. Engineer	EPA WOO	(206) 438-3053
Fred Gardner (Phase II only)	Environmentalist	Ecology PA/SI	(206) 438-3014
Tom Harris (Phase II only)	Environmentalist	Ecology PA/SI	(206) 438-3015
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Lloyd E. Berry, P.E.	County Engineer	Chelan County Courthouse, Wenatchee	(509) 664-5415
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	Phase I - 11am-1pm Phase II - 10am-2pm	70°, light high clouds, no wind. Partly overcast, no wind, 40°.

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency Organization)	03 TELEPHONE NO.
Lloyd E. Berry	Chelan County	(509) 664-5415

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Michael J. Spencer	Ecology	PA/SI	(206)438-3016	3 18 88 MONTH DAY YEAR

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- X A. SOLID
- B. POWDER, FINES
- C. SLUDGE
- D. OTHER (Specify)
- E. SLURRY
- F. LIQUID
- G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: Unknown
- CUBIC YARDS: Unknown
- NO. OF DRUMS: Unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- A. TOXIC
- B. CORROSIVE
- C. RADIOACTIVE
- D. PERSISTENT
- E. SOLUBLE
- F. INFECTIOUS
- G. FLAMMABLE
- H. IGNITABLE
- I. HIGHLY VOLATILE
- J. EXPLOSIVE
- K. REACTIVE
- L. INCOMPATIBLE
- M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	No disposal of hazardous wastes documented.				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology 6/09/87 and 11/18/87 SIs.
Ecology PA files.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: WA	02 SITE NUMBER: D980638985

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 A GROUNDWATER CONTAMINATION — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Monitoring wells showed contamination by metals, especially chromium. This was also present in a small leachate seep. Major groundwater aquifer is greater then 120 feet deep, is recharged by Wenatchee River.

01 B SURFACE WATER CONTAMINATION — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Very small volume seep had higher chromium concentrations than background, otherwise river/water sample uncontaminated.
Wenatchee River is immediately adjacent to site.

01 C CONTAMINATION OF AIR — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

01 D FIRE/EXPLOSIVE CONDITIONS — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

01 E DIRECT CONTACT — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Landfill is controlled, undergoing closure. No documentation records of hazardous waste disposed of.

01 F CONTAMINATION OF SOIL — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 AREA POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Landfill depth up to 70 feet, no known hazardous waste.

01 G DRINKING WATER CONTAMINATION — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Not suspected, as local public water supply is from springs up gradient of site, surface water not used.

01 H WORKER EXPOSURE/INJURY — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

01 I POPULATION EXPOSURE INJURY — 02 OBSERVED (DATE) — POTENTIAL / ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WA	D980638985

II. HAZARDOUS CONDITIONS AND INCIDENTS (continued)

01 [ ] J. DAMAGE TO FLORA — 02 OBSERVED (DATE) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

01 [ ] K. DAMAGE TO FAUNA — 02 OBSERVED (DATE) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION (Include names of species)

None observed nor suspected as a result of the two SIs.

01 [ ] L. CONTAMINATION OF FOOD CHAIN — 02 OBSERVED (DATE) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

01 [ ] M. UNSTABLE CONTAINMENT OF WASTES — 02 OBSERVED (DATE) [ ] POTENTIAL [ ] ALLEGED
(Spills/Runoff/Standing liquids/Leaking drums)
03 POPULATION POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

01 [ ] N. DAMAGE TO OFFSITE PROPERTY — 02 OBSERVED (DATE) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

01 [ ] O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 OBSERVED (DATE) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.

01 [ ] P. ILLEGAL/UNAUTHORIZED DUMPING — 02 OBSERVED (DATE) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

None observed nor suspected as a result of the two SIs.
Site is controlled, undergoing closure.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: 0

IV. COMMENTS

None

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

Ecology 6/09/87 Phase I SI and 11/18/87 Phase II SI.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Enter all applicable)	02. PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
A NPDES				
B UIC				
C AIR				
D RCRA				
E RCRA INTERIM STATUS				
F SPCC PLAN				
G STATE				
H LOCAL Chelan-Douglas				
I OTHER Health Dist.	Unknown	Unknown	Unknown	Landfill undergoing closure
J NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Enter all applicable)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Enter all applicable)	05 OTHER
A SURFACE IMPOUNDMENT			A INCENERATION	A BUILDINGS ON SITE
B PILES			B UNDERGROUND INJECTION	1
C DRUMS, ABOVE GROUND			C CHEMICAL/PHYSICAL	
D TANK, ABOVE GROUND			D BIOLOGICAL	
E TANK, BELOW GROUND			E WASTE OIL PROCESSING	06 AREA OF SITE
X F LANDFILL	Unknown	N/A	F SOLVENT RECOVERY	20, with Access
G LANDFARM			G OTHER RECYCLING/RECOVERY	9 for disposal
H OPEN DUMP			H OTHER	
I OTHER				

07 COMMENT

Landfill received municipal and household wastes from 1960 until presently. Is now undergoing closure. No documented hazardous waste disposed of.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Enter one)

A ADEQUATE, SECURE | X B MODERATE | C INADEQUATE, POOR | D INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Landfill is unlined, with two depressions filled in up to 70 feet deep. Surface layer is uncovered. Unknown how often cover is applied.

V. ACCESSIBILITY

01 ARE WASTES EASILY ACCESSIBLE? X YES NO

02 COMMENTS

Surface layer only, however landfill is undergoing closure.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology PA files
Dryden Landfill Closure Plan, 1986
Ecology SIs.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. X
NON-COMMUNITY	C. ☐	D. X

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. X
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 0.5 (mi)
B. 0.25 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

X A. ONLY SOURCE FOR DRINKING (Springs)

B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)

C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)

☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 1560

03 DISTANCE TO NEAREST DRINKING WATER WELL 0.25 (mi)

04 DEPTH TO GROUNDWATER 120 (ft)

05 DIRECTION OF GROUNDWATER FLOW S to SE

06 DEPTH TO AQUIFER OF CONCERN 120 (ft)

07 POTENTIAL YIELD OF AQUIFER Unknown (gpd)

08 SOLE SOURCE AQUIFER ☐ YES X NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

Nearest well is 0.25 miles, near community supply is 0.50 miles away, as springs upgradient of site.

10 RECHARGE AREA

X YES ☐ NO

COMMENTS Aquifer at 120 feet is in hydraulic connection with river, flows S to SE.

11 DISCHARGE AREA

X YES ☐ NO

COMMENTS Landfill shallow aquifer into river, river into deep aquifer?

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

A. RESERVOIR, RECREATION DRINKING WATER SOURCE

X B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES

☐ C. COMMERCIAL, INDUSTRIAL

D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Wenatchee River	X	0.05 (mi)
		(mi)
		(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 750 NO. OF PERSONS	B. Unknown NO. OF PERSONS	C. 1560 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.2 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE Unknown

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.10 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Landfill is approximately 0.7 miles NW of Dryden, unincorprated. Population within three miles estimated at 1560. Area is otherwise rural, agricultural. Peshastin is 1.8 miles NW of site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WA	D980638985

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

A $10^{-6} - 10^{-8}$ cm/sec B $10^{-4} - 10^{-6}$ cm/sec X C. $10^{-4} - 10^{-3}$ cm/sec D GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

A. IMPERMEABLE (Less than 10^{-6} cm/sec) B RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) x C RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
> 120 (ft)	Mostly 10-50, max 70 (ft)	Unknown	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
-17 (in)	1.5 (in)	1 %	NW	8 %

09 FLOOD POTENTIAL	10
SITE IS IN N/A YEAR FLOODPLAIN	N/A SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE		OTHER	
A N/A	(mi)	B N/A	(mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

(mi)

ENDANGERED SPECIES: N/A

13 LAND USE IN VICINITY

DISTANCE TO

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A 0.7 (mi)	B 0.2 (mi)	C 0.25 (mi)	D 0.1 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Landfill site on top of a bluff, 130 feet above average Wenatchee River Level. Area is landslide prone. State Highway 2 runs NW to SE along NW border, river is along SE border and an irrigation canal runs for 800-1000 feet along southern border.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

PA files
Ecology SIs.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	Ecology Manchester Lab	12/87
SURFACE WATER	3	Ecology Manchester Lab	12/87
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER Sediment	3	Ecology Manchester Lab	12/87

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
water level	Used water level indicator tape on three monitoring wells.

IV. PHOTOGRAPHS AND MAPS

01 TYPE X GROUND AERIAL

02 IN CUSTODY OF Ecology PA/SI
(Name of organization or individual)

03 MAPS X YES NO

04 LOCATION OF MAPS Ecology PA/SI

V. OTHER FIELD DATA COLLECTED (Describe)

N/A

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

Ecology 11/18/87 SI

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. CURRENT OWNER(S) | **PARENT COMPANY** (If applicable)

Field	Current Owner	Field	Parent Company
01 NAME	Chelan County	08 NAME	
02 D+B NUMBER		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	Courthouse	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE		11 SIC CODE	
05 CITY	Wenatchee	12 CITY	
06 STATE	WA	13 STATE	
07 ZIP CODE	98801	14 ZIP CODE	
01 NAME		08 NAME	
02 D+B NUMBER		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		10 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE		11 SIC CODE	
05 CITY		12 CITY	
06 STATE		13 STATE	
07 ZIP CODE		14 ZIP CODE	
01 NAME		08 NAME	
02 D+B NUMBER		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		10 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE		11 SIC CODE	
05 CITY		12 CITY	
06 STATE		13 STATE	
07 ZIP CODE		14 ZIP CODE	
01 NAME		08 NAME	
02 D+B NUMBER		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		10 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE		11 SIC CODE	
05 CITY		12 CITY	
06 STATE		13 STATE	
07 ZIP CODE		14 ZIP CODE	

III. PREVIOUS OWNER(S) (List most recent first) | **IV. REALTY OWNER(S)** (If applicable; list most recent first)

Field	Previous Owner	Field	Realty Owner
01 NAME		01 NAME	
02 D+B NUMBER		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE		04 SIC CODE	
05 CITY		05 CITY	
06 STATE		06 STATE	
07 ZIP CODE		07 ZIP CODE	
01 NAME		01 NAME	
02 D+B NUMBER		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE		04 SIC CODE	
05 CITY		05 CITY	
06 STATE		06 STATE	
07 ZIP CODE		07 ZIP CODE	
01 NAME		01 NAME	
02 D+B NUMBER		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE		04 SIC CODE	
05 CITY		05 CITY	
06 STATE		06 STATE	
07 ZIP CODE		07 ZIP CODE	

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Chelan County Engineer
Courthouse
Wenatchee, WA (509)664-5415

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
Chelan County	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Courthouse	

05 CITY	06 STATE	07 ZIP CODE
Wenatchee	WA	98801

08 YEARS OF OPERATION	09 NAME OF OWNER
25	Same

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
None	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Chelan County Engineer
Courthouse
Wenatchee, WA (509)664-5415

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

N/A

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology PA files
Chelan County Engineer

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WA	D980638985

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ H. ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	N/A 02 DATE	03 AGENCY
01 ☐ J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ L. ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ N. CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ O. EMERGENCY DIKING SURFACE WATER DIVERSION 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY

EPA FORM 2070-13(7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WA	D980638985

II PAST RESPONSE ACTIVITIES *(Continued)*

01 R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	02 DATE	03 AGENCY
01 S. CAPPING/COVERING 04 DESCRIPTION	02 DATE	03 AGENCY
01 T. BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE	03 AGENCY
01 U GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	02 DATE	03 AGENCY
01 V BOTTOM SEALED 04 DESCRIPTION	02 DATE	03 AGENCY
01 W GAS CONTROL 04 DESCRIPTION	02 DATE	03 AGENCY
01 X FIRE CONTROL 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 Y LEACHATE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 Z AREA EVACUATED 04 DESCRIPTION	02 DATE	03 AGENCY
01 1 ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE	03 AGENCY
01 2 POPULATION RELOCATED 04 DESCRIPTION	02 DATE	03 AGENCY
01 3 OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE	03 AGENCY

Site is undergoing closure.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports.)

Ecology PA files.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE: WA	02 SITE NUMBER: D980638985

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION **X** YES NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY ENFORCEMENT ACTION

Ecology Notice of Violation 10/03/80.
Ecology Regulatory Order 12/10/80.
To monitor and collect leachate from landfill

III. SOURCES OF INFORMATION *Cite specific references, e.g., state files, sample analysis, reports)*

Ecology PA files.

oto 1 and 2: View from highway bridge of
natchee River during Phase I (above) and
ase II (below) SIs.

Photo 3 (above): View of concrete-lined area of Pioneer ditch irrigation canal, above, and south of landfill.

Photo 4 (below): View from area of irrigation overflow (see in Photo 1) towards highway bridge.

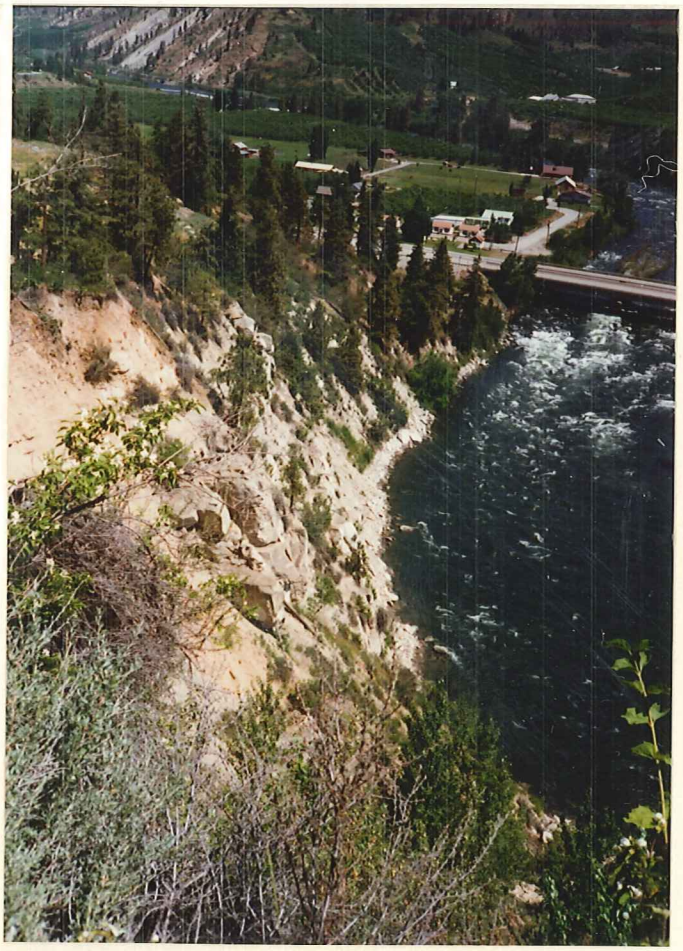


Photo 5 (above): View upriver from base of cliff during Phase I SI.

Photo 6 (below): Close up of apparent leachate impacted areas, Phase I SI.

Photo 7: Checking water level in in-waste monitoring well, Phase I.

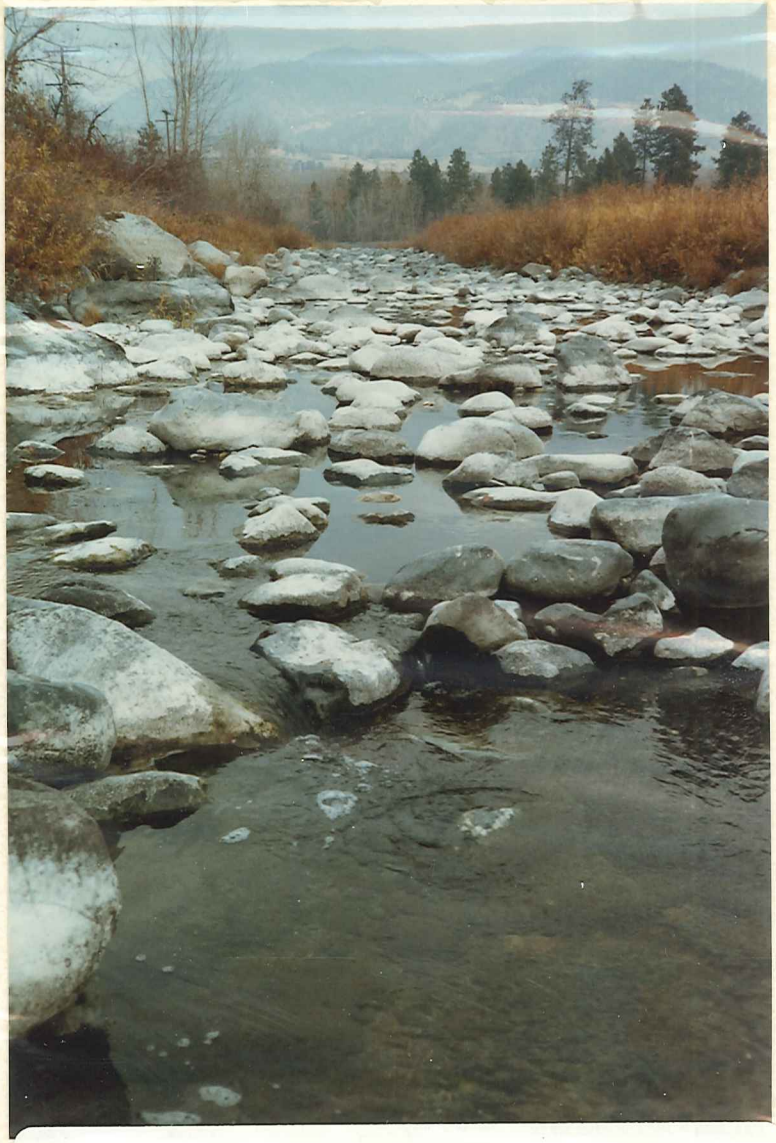
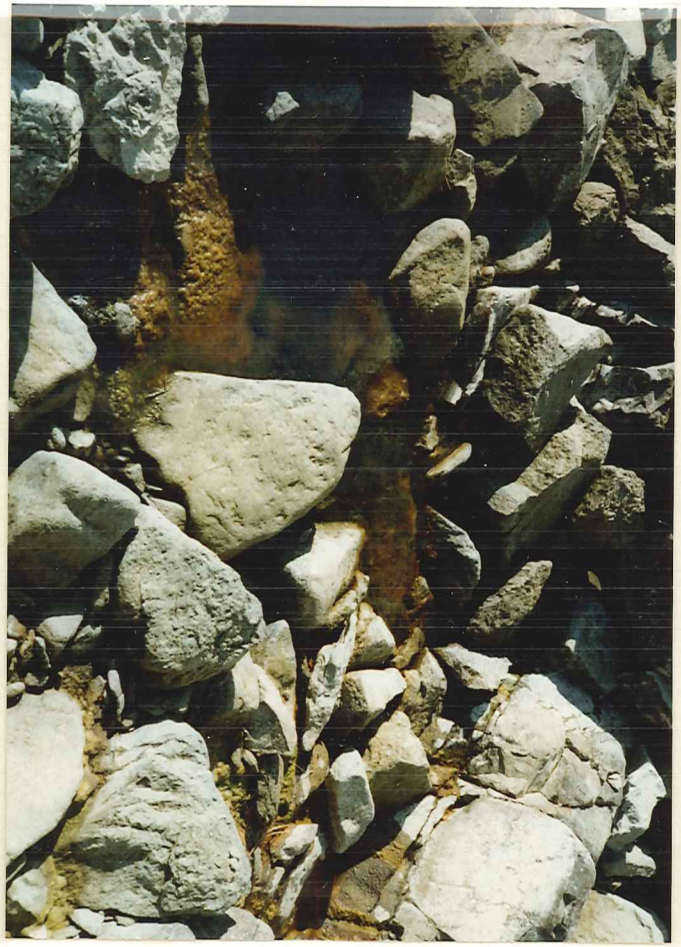


Photo 8: Site of where upriver samples MJS084 and MJS84 were collected.

Photo 9 (above): Area of small seep upriver, seep where samples MJS085 and MJS85 were collected.

Photo 10 (below): Major leachate-impacted area at the base of the cliff, below landfill where samples MJS086 and MJS86 were collected



Photos 11-13: Close ups of major (base of cliff) area observed during drive-by on October 14, 1987.

All photographs taken by M.J. SPencer using a Canon Sureshot 35 mm, f/2.8 Autofocus during either the 6/09/87 Phase SI, or 11/18/87 Phase II SI.

SITE INVESTIGATION SAMPLING PLAN

Chelan County Dryden Landfill

WAD980638985

June 9, 1987

Prepared by
Michael J. Spencer

Washington State Department of Ecology

Site Sampling Plan Summary

Site: Chelan County Dryden Landfill
State Route 2
Dryden, WA 98801

Proposed Date of Investigation: June 9, 1987

Preparer: Michael J. Spencer

Michael J. Spencer
Site Inspection Team Leader Date

I. INTRODUCTION

The purpose of this plan is to detail the program of site investigation sampling activities to be carried out by the Ecology PA/SI team at Chelan County Dryden Landfill.

II. SITE DESCRIPTION AND WASTE CHARACTERISTICS

The site is an active county-owned and operated 30 acre landfill which began as a dump in the early 1960's. It has received primarily household and municipal wastes and accepted sewage treatment plant sludge until 1980. There is a possibility that substantial amounts of pesticide-contaminated wastes may have also been disposed of here.

Local soil data indicates 15 inches of silt loam, over a clay loam disintegrating into sandstone to a depth of 20 feet or more. A layer of sandstone 60 or more feet thick underlies the landfill, which contains garbage at a depth of about 50 feet. This sandstone formation contains fractures which have allowed leachate to seep into the ground water, which flows to the Wenatchee River, adjacent to the eastern edge of the site.

An irrigation canal upgradient to the site is suspected to contribute to this leachate discharge into the river and was lined in 1984. However, several onsite monitoring wells appear to be dry when leachate has been observed, thus the source of ground water is yet unknown. There is no known use of surface water for drinking within three miles of the site, and, as the leachate flows directly into the river, potential of leachate contamination of any ground water is very low.

III. OBJECTIVES

Water samples will be collected from upgradient and downgradient wells, where appropriate and from leachate-surface water confluence in river, if at all possible, to determine if there is any migration of hazardous waste from site.

IV. SAMPLE COLLECTION/ANALYSIS PARAMETERS

Wells will be purged as appropriate, and river-leachate sample taken by grab sample. These will be analyzed for the following:

Organophosphorus Pesticides
Pesticides/PCB's
Priority Pollutant Metals
Purgeable Hydrocarbons

Sample Information

All samples will be analyzed by Ecology Manchester Laboratory.

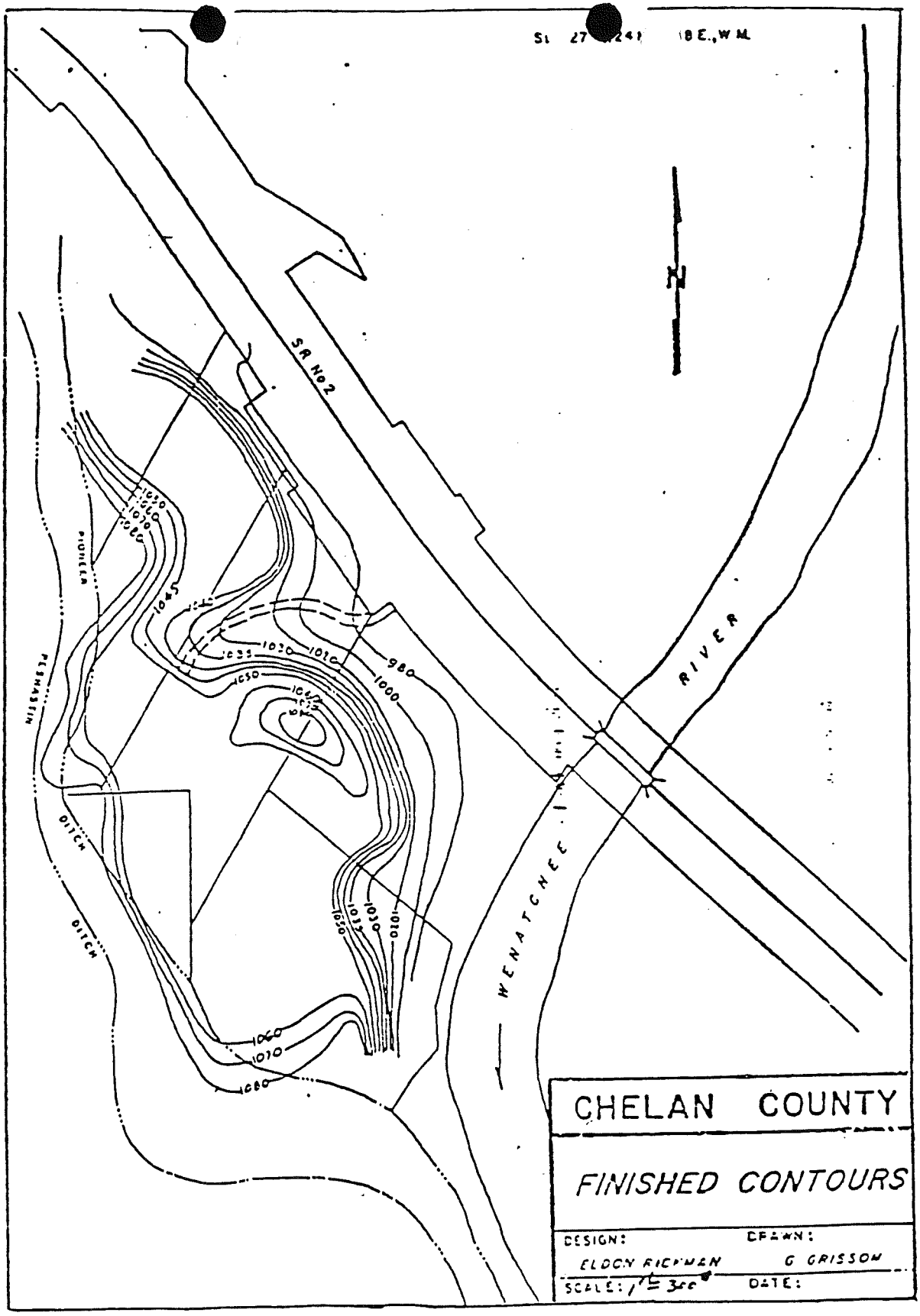


FIGURE 2. DRYDEN LANDFILL

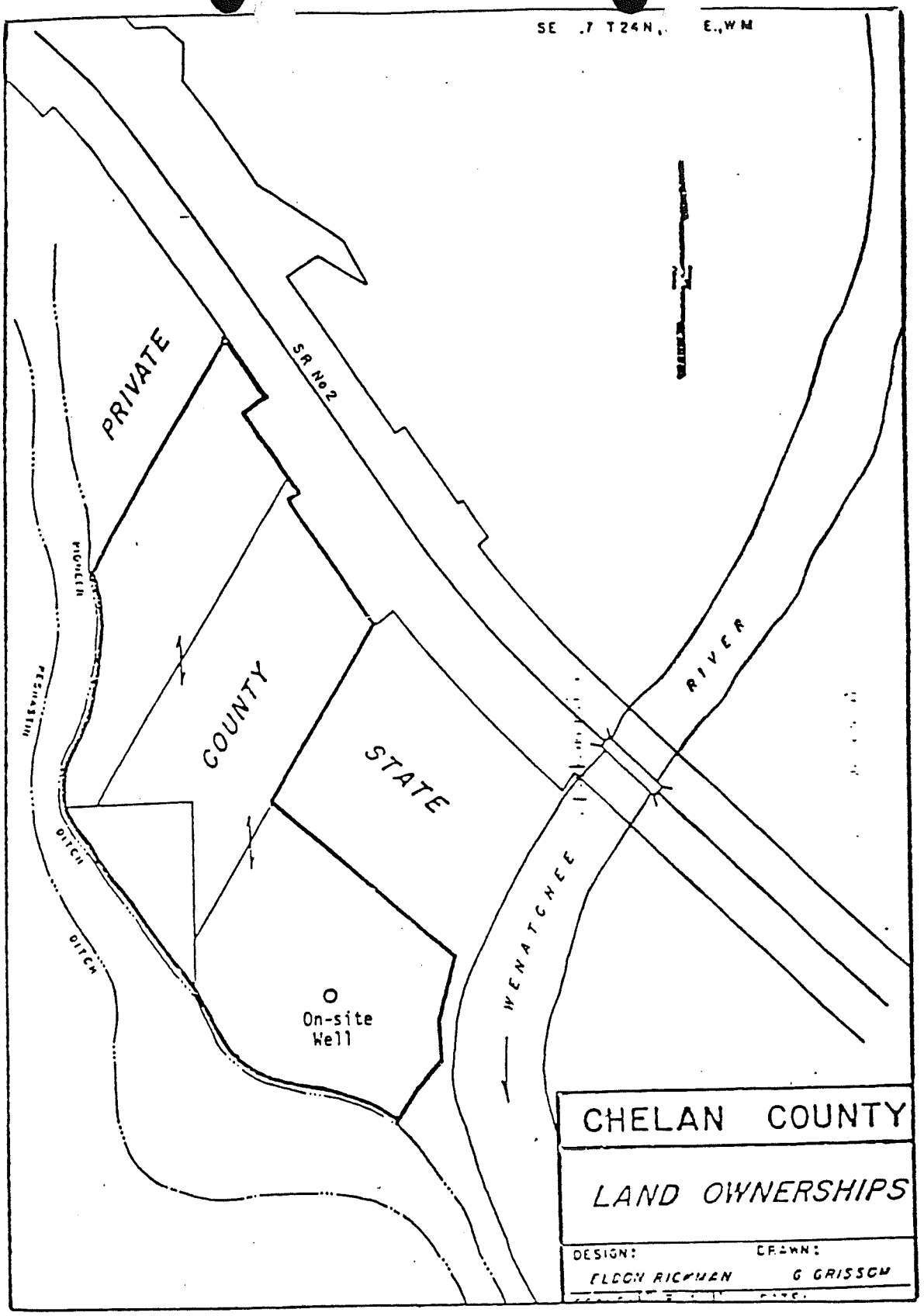


FIGURE 5. LOCATION OF IRRIGATION DITCHES AND ON-SITE MONITORING WELL DRYDEN LANDFILL

Laboratory Custody Procedures

1. Couriers picking up samples at the bus depot, post office, etc., sign and retain the shipping documents to acknowledge receipt of the samples.

2. All incoming samples are received only by the laboratory sample custodian or one of his alternates who indicate receipt by signing the chain of custody record accompanying the samples and retaining it as part of the permanent record. Samples are then logged into the laboratory and assigned a laboratory number.

3. The sample custodian or one of his alternates is responsible for the security of the samples in the laboratory. Samples are stored in locked or sealed refrigerators or cabinets with the keys to the locks held by the sample custodian or one of his alternates.

4. Only the sample custodian or his alternates distribute samples to laboratory personnel who are to perform analyses. Laboratory personnel record in their laboratory notebook or analytical worksheet information describing the sample, the procedures performed, and the results of the analyses. The notes shall be retained as a permanent record in the laboratory and should note any abnormalities or other significant observations about the samples or analyses.

5. Laboratory personnel are responsible for the care and custody of the sample once it is distributed by the sample custodian.

6. Once the sample analyses are completed, the unused portion of the samples, together with all identifying tags and laboratory records, are returned to the sample custodian. The returned tagged sample is retained in locked or sealed cabinets or refrigerators until it is required for trial.

7. Analytical results are checked and initialed by senior laboratory personnel. The original lab bench sheets are stored in the laboratory files.

8. Samples and tags are discarded only upon the order of the Laboratory Director, after conferring with appropriate personnel in the Enforcement Division or the Assistant Attorney General handling the case to make certain that these items are no longer needed.

Site Safety and Health Plan

Chelan County Dryden Landfill

WAD980638985

June 9, 1987

Prepared By

Michael J. Spencer

Washington State Department of Ecology

Site: Chelan County Dryden Landfill

Location: State Route 2
Dryden, Chelan County, Washington

Proposed Date of Investigation: June 9, 1987

Preparer: Michael J. Spencer

Reviewed by:

Michael J. Spencer
Site Inspection Team Leader — Date

Bob Kievit, EPA-X-WOO
Site Inspection Team Member — Date

Site Safety Plan Summary

Type of Facility: Active Municipal Landfill

Land Use in Surrounding Area: Residential and agricultural area. Landfill is on a bluff overlooking Wenatchee River.

Hazard Type: Potential for pesticide contamination of ground water which flows directly to Wenatchee River.

Waste Type: Landfill receives primarily municipal and household wastes. Accepted sewage sludge until 1980. Possibly accepted pesticide wastes.

Waste Characteristics: Any pesticides present would be toxic and persistent.

Identified Wastes: Previous samples (9/83) showed no evidence of pesticides/PCB's, only presence of typical landfill leachate, not enriched in heavy metals.

Sampling Plan: Water samples to be collected from monitoring wells and, if possible, from leachate seep into river.

Levels of Protection: Level D, Level C if necessary. Professional judgment will be used. No direct sampling of tanks or containers will be done.

Monitoring Equipment: TIP organic vapor detector, LEL meter.

Factors Promoting Action: This inspection is being carried out under the Multi-Site Cooperative Agreement, Preliminary Assessment Site Inspection Program.

Personnel: Michael J. Spencer

Inspection Coordinator:
Ecology Team Members: Michael J. Spencer
EPA Project Officer: Bob Kievit

Work Effort and Level of Protection

Sampling activities will entail ground water and possible shallow subsurface soil sampling. These activities are believed to be of a low relative hazard due to the expected dilution of hazardous materials if present. Level D protection will thus be utilized.

I. Level D

- Tyvek coveralls or rain suits
- Neoprene steel toe and shank boots
- Chemical resistant gloves - "Solvex"
- Safety goggles - if necessary
- Hard hat
- Latex inner glove liners

II. Level C

- Air purifying full face respirator (MSHA - NIOSH approved)
- Cyanide and organic vapor canister/cartridges
- Tyvek (Saranex if raining) coveralls
- Gloves (inner), latex chemical resistant
- Boots, chemical resistant steel toe and shank
- Hard Hat
- Safety Goggles
- Duct tape

Decontamination Procedures

I. Level D Decontamination

If soiled, Tyvek coveralls, and gloves will be placed in plastic bags and removed from the site for disposal. Boots will be washed with detergent and rinsed before leaving the site. If rain suits instead of Tyvek coveralls are used, soil will be rinsed off while they are still being worn and before the boots are washed.

II. Level C Decontamination

Station 1: Contaminated Equipment Drop

Equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) will be separated and deposited on plastic drop cloths. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross-contamination.

Station 2: Boot and Glove Wash

Scrub boots and gloves with detergent/water solution.

Equipment: container (20-30 gallons)
detergent water
2-3 long-handle, soft-bristle scrub brushes

Station 3: Boot and Glove Rinse

Rinse off detergent solution from Station 2 using copious amounts of water. Repeat as necessary.

Equipment: container (30-50 gallons)
or
pressure spray unit
water
2-3 long-handle, soft-bristle scrub brushes

Station 4: Tape Removal

Remove tape around boots and gloves and deposit in plastic bag or container with plastic liner.

Equipment: plastic bag
or
container (20-30 gallons)
plastic liners

Station 5: Boot Removal

Remove boots, step onto clean dry plastic sheeting.

Station 6: Outer Glove Removal

Remove outer gloves and deposit in plastic bag or container with plastic liner.

Equipment: plastic bag
or
container (20-30 gallons)
plastic liners

Station 7: Coverall Removal

Remove coveralls and deposit in plastic bag or container with plastic liner.

Equipment: plastic bag
or
container (20-30 gallons)
plastic liners

Station 8: Facepiece Respirator Removal

Remove facepiece. Avoid touching face with gloves. Deposit facepiece in individual plastic bags. Decontaminate off of the site.

Equipment: plastic bags

Station 9: Inner Glove Removal

Remove inner gloves and deposit in a plastic bag or a container with plastic liner.

Equipment: plastic bag
or
container (20-30 gallons)
plastic liners