NASCO INC.
ENVIRONMENTAL SERVICES
100 Leslie Street • Buffalo, NY 14211
(716) 893-0532

CONTINUING ENVIRONMENTAL INVESTIGATION REPORT

1205 SOUTH PARK AVENUE
BUFFALO, NEW YORK

PREPARED FOR:
BUFFALO URBAN RENEWAL AGENCY
920 CITY HALL
BUFFALO, NEW YORK 14202-3376

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1.0 INTRODUCTION

The Buffalo Urban Renewal Agency is contemplating the development of the former LTV (Republic Steel) property located at 1205 South Park Avenue, Buffalo, New York. As a necessary function of this project, Recra Environmental, Inc. was contracted to perform a Phase I Environmental Assessment on the property in October of 1990. Based upon the results of that investigation, Recra Environmental, Inc. was contracted to perform a Phase II Environmental Investigation in August of 1991. The results of that investigation concluded that petroleum product contamination was present in the general vicinity of the former aboveground storage tank area.

As a result of these prior investigations, the City of Buffalo contracted Enasco, Inc. in October of 1994 to perform a study in an attempt to quantify the level of contamination present on the subject property. During the course of that investigation, several test pits were excavated. In nearly all cases, gross petroleum contamination was observed. In some test pits, free product was observed.

As a result of these site conditions, the City of Buffalo contracted Enasco, Inc. to perform additional investigative activities to determine the extent of the petroleum contamination at 1205 South Park Avenue, Buffalo, New York.

This report both summarizes the investigative activities which were completed as part of the continuing investigation and presents the results of this study.

2.0 PROJECT SUMMARY

It has been determined that the area of petroleum contamination at 1205 South Park Avenue, Buffalo, New York is approximately 2.18 acres. Based upon visual observations, it appears that the vertical migration of the petroleum contamination is restricted due to the presence of a clay layer. This clay layer was observed to be at an average depth of approximately 3 feet. Based up these figures, it is estimated that there is approximately 10557 cubic yards of contaminated material present. This estimated volume is predicated on measurements obtained during the course of this study and upon the assumption that the top 3 feet of soils are contaminated.

For this particular site, two remedial options are recommended. The first remedial option involves the excavation, disposal and replacement of contaminated soils. It is estimated that this option will take 90 days to complete at an approximate cost of $1,000,000. The second remedial option involves the in-situ bioremediation of contaminated soils. It is estimated that this option will take 6 to 18 months to complete at an approximate cost of $360,000.

However, it should be noted that this estimate is based upon the results of this and prior studies. It should be further noted that because of the historical uses of the property, other areas of contamination may exist. Enasco, Inc. makes no warranties or representations as to the presence or extent of contamination that may be present on other areas of the property.

Moreover, it should be understood that because of the nature of the investigative techniques employed, and the financial contraints of this project, the estimated area and volume of contamination represents only an estimate. The actual area and volume of contamination may differ from the estimated values.

3.0 INVESTIGATIVE APPROACH

The previous investigations at the subject property indicated gross petroleum contamination in all the test pits excavated. The indicators of gross petroleum contamination were direct visual observations of petroleum product, the visual observation an oil sheen on groundwater, and/or the presence of strong petroleum odors in the test pits.

In order to determine the extent of contamination present, additional test pits were excavated. Aditional test pits were excavated along the same axes as in the previous investigation. In addition, test pits were excavated along two additional axes. In the event that petroleum product, oil sheens or petroleum odors were enountered in any test pit, such condition was noted and and additional test pits were excavated until such time no visual contamination or petroleum odors were noted. At that time, a soil sample was taken to determine if contamination was present.

It should be noted that Test Pit 5 acted as the center point for the project sampling scheme. Sampling locations are shown on the Test Pit Location diagram which can be found in Appendix A. The sampling activities were completed as follows:

* Test Pit 6, is located at a distance of 75 feet southwest of Test Pit 5. The test pit was excavated to a depth of 5.7 feet. Sand and topsoil were encountered to a depth of 1.0 feet. Beyond that depth, cinders and slag were encountered. Petroleum contamination was first encountered at a depth of 2.0 feet. a strong petroleum odor was noted during the entire excavation. Groundwater began infiltrating the excavation at a depth of 2.5 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Enasco, Inc.'s November 1994 report. After the excavation had been completed, a sample was

obtained by compositing the soils from the entire depth of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody within 4 hours of sampling. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 7, is located at a distance of 25 feet southwest of Test Pit 5. The test pit was excavated to a depth of 5.9 feet. Sand and topsoil were encountered to a depth of 1.0 feet. Cinders and slag were encountered from a depth of 1.0 feet to 4.0 feet. Beyond that point, sandy clay was observed. Petroleum contamination was first encountered at a depth of 2.0 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.5 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Enasco, Inc.'s November 1994 report. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody within 4 hours of sampling. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 8, is located at a distance of 25 feet northeast of Test Pit 5. The test pit was excavated to a depth of 6.1 feet. Sand and topsoil were encountered to a depth of 1.0 feet. Cinders and slag were encountered from a depth of 1.0 feet to 3.0 feet. Beyond that point, sandy clay was observed. Petroleum contamination was first encountered at a depth of 2.0 feet. a strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.5 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Enasco, Inc.'s November 1994 report. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody within 4 hours of sampling. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 9, is located at a distance of 75 feet northeast of Test Pit 5. The test pit was excavated to a depth of 6.4 feet. Sand and topsoil were encountered to a depth of 1.0 feet. Cinders and slag were encountered from a depth of 1.0 feet to 2.0 feet. Slag and clay was encountered from a depth of 2.0 to 3.0 feet. Beyond that point, sandy clay was observed. Petroleum contamination was first encountered at a depth of 2.0 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.5 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Enasco, Inc.'s November 1994 report. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth

of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody within 4 hours of sampling. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

In addition to sampling the soil profile, a groundwater sample was obtained. The sample containers were placed below the floating petroleum phase layer and then filled. The resultant sample was placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody within 4 hours of sampling. The water samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 10, is located at a distance of 50 feet northwest of Test Pit 5. The test pit was excavated to a depth of 6.4 feet. Sand and topsoil were encountered to a depth of 1.0 feet. Cinders and slag were encountered from a depth of 1.0 feet to 2.0 feet. Slag and clay was encountered from a depth of 2.0 to 3.0 feet. Beyond that point, sandy clay was observed. Petroleum contamination was first encountered at a depth of 2.0 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.5 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Enasco, Inc.'s November 1994 report. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth

of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody within 4 hours of sampling. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 11, is located at a distance of 50 feet southeast of Test Pit 5. The test pit was excavated to a depth of 6.6 feet. Sand and topsoil were encountered to a depth of 1.0 feet. Slag and sand were encountered from a depth of 1.0 feet to 2.0 feet. Beyond that point, sandy clay was observed. Petroleum contamination was first encountered at a depth of 2.0 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.5 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Enasco, Inc.'s November 1994 report. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody within 4 hours of sampling. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 12, is located at a distance of 125 feet northeast of Test Pit 5. The test pit was excavated to a depth of 4.5 feet. Sand and topsoil were encountered to a depth of 0.5 feet. Cinders were encountered from a depth of 0.5 feet to 2.0 feet. Sandy clay was observed from a depth of 2.0 to 3.0 feet. Clay was observed from a depth of 3.0 to 4.5 feet. No groundwater was observed infiltrating the excavation. In addition, no petroleum odors were observed. A photograph of this Test Pit can be found in Appendix B. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 13, is located at a distance of 100 feet southeast of Test Pit 5. The test pit was excavated to a depth of 3.6 feet. Slag was encountered to a depth of 0.5 feet. Soil and debris were encountered from a depth of 0.5 feet to 1.0 feet. Cinders were encountered from a depth of 1.0 to 2.0 feet. Clay was encountered from 2.0 to 3.6 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.0 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 14, is located at a distance of 150 feet southeast of Test Pit 5. The test pit was excavated to a depth of 3.0 feet. Soil and slag were encountered to a depth of 1.1 feet. Cinders were encountered from a depth of 1.1 to 1.9 feet. Clay was encountered

from 1.9 to 3.0 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 1.5 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 15, is located at a distance of 200 feet southeast of Test Pit 5. The test pit was excavated to a depth of 3.5 feet. Cinders and slag were encountered to a depth of 1.5 feet. Sand was encountered from a depth of 1.5 to 2.0 feet. Clay was encountered from 2.0 to 3.5 feet. A slight petroleum odor was noted during the excavation. In addition, no groundwater was observed A photograph of this Test Pit can be found in Appendix B.

* Test Pit 16, is located at a distance of 250 feet southeast of Test Pit 5. The test pit was excavated to a depth of 3.7 feet. Cinders were encountered to a depth of 1.7 feet. Clay was encountered from 1.7 to 3.7 feet. A slight petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 1.7 feet. An oil sheen was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 17, is located at a distance of 275 feet southeast of Test Pit 5. The test pit was excavated to a depth of 3.7 feet. Topsoil was encountered to a depth of 1.3 feet. Sandy clay was observed from a depth of 1.3 to 3.7 feet. No groundwater was observed in the excavation. In addition, no petroleum odors were observed. A photograph of this Test Pit can be found in Appendix B. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed

on ice and delivered to the contract laboratory under a strict chain of custody. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 18, is located at a distance of 100 feet south of Test Pit 5. The test pit was excavated to a depth of 3.0 feet. Slag was encountered to a depth of 0.5 feet. Topsoil was encountered from a depth of 0.5 to 1.0 feet. Cinders were encountered from a depth of 1.0 to 2.0 feet. Clay was encountered from 2.0 to 3.0 feet. A slight petroleum odor was noted during the excavation. No groundwater was observed. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 19, is located at a distance of 175 feet south of Test Pit 5. The test pit was excavated to a depth of 3.0 Slag was encountered to a depth of 0.5 feet. Topsoil was encountered from a depth of 0.5 to 1.0 feet. Sandy clay was encountered from 1.0 to 3.0 feet. No groundwater was observed. In addition, no petroleum odors were observed. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 20, is located at a distance of 125 feet southwest of Test Pit 5. The test pit was excavated to a depth of 4.3 feet. Sand and topsoil were encountered to a depth of 1.1 feet. Rubble was encountered from a depth of 1.1 feet to 2.2 feet. Beyond that point, sandy clay was observed. Petroleum contamination was first encountered at a depth of 2.2 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.2 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 21, is located at a distance of 175 feet southwest of Test Pit 5. The test pit was excavated to a depth of 4.1 feet. Topsoil and cinders were encountered to a depth of 1.5 feet. Clay was observed from a depth of 1.5 to 2.8 feet. Sandy clay was observed from a depth of 2.8 to 4.1 feet. No groundwater was observed in the excavation. In addition, no petroleum odors were observed. A photograph of this Test Pit can be found in Appendix B. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 22, is located at a distance of 100 feet northwest of Test Pit 5. The test pit was excavated to a depth of 4.5 feet. Topsoil and rubble were encountered to a depth of 1.4 feet. Sandy clay was encountered from a depth of 1.4 feet to 3.4 feet. Beyond that point, clay was observed. Petroleum contamination was first encountered at a depth of 3.4 feet. A strong petroleum odor was noted during the entire excavation. Groundwater began infiltrating the excavation at a depth of 3.4 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 23, is located at a distance of 275 feet northwest of Test Pit 5. The test pit was excavated to a depth of 4.0 feet. Topsoil was encountered to a depth of 0.9 feet. Stones and gravel were observed from a depth of 0.9 to 4.0 feet. Groundwater was observed to infiltrate the excavation at a depth of 3.7 feet. A slight oil sheen was

observed on the groundwater. However, no petroleum odors were observed. A photograph of this Test Pit can be found in Appendix B. After the excavation had been completed, a sample was obtained by compositing the soils from the entire depth of the excavation. The resultant sample was mixed, composited and placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody. The samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

In addition to sampling the soil profile, a groundwater sample was obtained. The resultant sample was placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody. The water samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 24, is located at a distance of 100 feet northwest of Test Pit 5. The test pit was excavated to a depth of 4.3 feet. Topsoil, sand and debris were encountered to a depth of 1.3 feet. Cinders and slag were encountered from a depth of 1.3 feet to 2.1 feet. Beyond that point, sandy clay was observed. Petroleum contamination was first encountered at a depth of 1.6 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 1.6 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 25, is located at a distance of 150 feet north of Test Pit 5. The test pit was excavated to a depth of 3.9 feet. Topsoil was encountered to a depth of 0.8 feet. Sand and cinders were encountered from 0.8 to 2.3 feet. Sandy clay was encountered from 2.3 to 3.3 feet. Finally, clay was encountered from 3.3 to 3.9 feet. A slight petroleum odor was noted during the excavation. No groundwater infiltration was observed. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 26, is located at a distance of 175 feet north of Test Pit 5. The test pit was excavated to a depth of 4.2 feet. Topsoil was encountered to a depth of 1.0 feet. Sand was observed from a depth of 1.0 to 3.6 feet. Clay was encountered from 3.6 to 4.2 feet. No groundwater infiltration was observed. In addition, no petroleum odors were observed. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 27, is located at a distance of 75 feet east of Test Pit 5. The test pit was excavated to a depth of 3.9 feet. Topsoil and cinders were encountered to a depth of 1.0 feet. Cinders and slag were encountered from a depth of 1.0 feet to 2.7 feet. Beyond that point, clay was observed. Petroleum contamination was first encountered at a depth of 2.7 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.7 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 28, is located at a distance of 125 feet east of Test Pit 5. The test pit was excavated to a depth of 4.5 feet. Topsoil and cinders were encountered to a depth of 1.5 feet. Gravel was observed from a depth of 1.5 to 3.0 feet. Clay was observed from 3.0 to 4.5 feet. Groundwater was observed to infiltrate the excavation at 1.5 feet. A slight oil sheen was observed on the groundwater. In addition, a slight petroleum

odor was observed. A photograph of this Test Pit can be found in Appendix B. After the excavation had been completed, a groundwater sample was obtained. The resultant sample was placed in the appropriate, pre-cleaned and labeled sample containers. The sample containers were then placed on ice and delivered to the contract laboratory under a strict chain of custody. The water samples from this test point were analyzed for the following parameters: volatile organic compounds, Method SW-846 8021; semi-volatile organic compounds, Method SW-846 8270; and TCLP lead, Method SW-846 3015/6010.

* Test Pit 29, is located at a distance of 50 feet west of Test Pit 5. The test pit was excavated to a depth of 3.8 feet. Topsoil, sand, and grit were encountered to a depth of 1.7 feet. Cinders were encountered from a depth of 1.7 feet to 2.6 feet. Beyond that point, clay was observed. Petroleum contamination was first encountered at a depth of 2.6 feet. A strong petroleum odor was noted during the excavation. Groundwater began infiltrating the excavation at a depth of 2.6 feet. Gross petroleum contamination was noted floating on top of the groundwater in the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 30, is located at a distance of 100 feet west of Test Pit 5. The test pit was excavated to a depth of 4.0 feet. Topsoil was encountered to a depth of 1.0 feet. Sand and grit was encountered from a depth of 1.0 feet to 2.3 feet. Beyond that point, sandy clay was observed. A slight petroleum odor was noted during the excavation. No groundwater infiltrated the excavation. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 31, is located at a distance of 150 feet west of Test Pit 5. The test pit was excavated to a depth of 4.1 feet. Slag, rubble, and debris was encountered through the entire excavation. A slight petroleum odor was noted during the excavation. Groundwater exhibiting a slight oil sheen began infiltrating the excavation at a depth of 3.1 feet. A photograph of this Test Pit can be found in Appendix B.

* Test Pit 32, is located a distance of 200 feet west of Test Pit 5. The test pit was excavated to a depth of 3.3 feet. Slag, bricks and other debris was encountered to a depth of 1.2 feet. Sand was encountered from a depth of 1.2 to 1.6 feet. Beyond that point, clay was observed. No groundwater was observed in the excavation. In addition, no petroleum odors were observed. A photograph of this Test Pit can be found in Appendix B.

Quality control measures completed to ensure the quality of the data collected during this investigation included the following:

* All sampling equipment was decontaminated prior to each use for the collection of samples.

* All sample containers were received precleaned and unopened from the contract laboratory.

* All samples were obtained immediately after the excavation of each test point to prevent any significant volatilization of contaminants.

* All samples were placed in appropriate containers, labeled, sealed and preserved by cooling until analysis by the contract laboratory. All samples were handled under strict chain-of-custody procedures throughout their existence until their analysis was complete.

4.0 INVESTIGATION RESULTS

The results of the analytical testing indicate that petroleum contaminants exist at 1205 South Park Avenue. Tables I through IV located on the following pages summarize the analytical testing results from this study as well as the study performed by Enasco, Inc. in November of 1994.

TABLE I

TCLP SEMI-VOLATILE ORGANIC COMPOUND SUMMARY
WATER PORTION

COMPOUND	NYSDEC Guidance Values (ppb)	TEST PIT 9 (ppb)	TEST PIT 23 (ppb)	TEST PIT 28 (ppb)
anthracene	50	98	U	13
fluorene	50	257	U	14
phenanthrene	50	708	U	45
pyrene	50	102	U	13
acenaphthene	20	177	U	17
benzo[a]anthracene	0.002	U	U	4.8J
fluorene	50	27	U	5.1J
benzo[b]fluoranthene	0.002	15	U	U
benzo[k]fluoranthene	0.002	15	U	U
benzo[a]pyrene	0.002	26	U	2.1J
dibenzo[a,h]anthracene	50	U	U	U
benzo[g,h,i]perylene	0.002	11	U	U
indeno[1,2,3-cd]pyrene	0.002	U	U	U
napthalene	10	850	U	U
chrysene	0.002	U	U	8.9J

U - INDICATES COMPOUND WAS ANALYZED FOR BUT NOT DETECTED
J - INDICATES AN ESTIMATED VALUE

TABLE II

VOLATILE ORGANIC COMPOUND SUMMARY
WATER PORTION

COMPOUND	NYSDEC Guidance Values (ppb)	TEST PIT 9 (ppb)	TEST PIT 28 (ppb)	TEST PIT 23 (ppb)
tert-Butylmetyl ether	50	U	U	U
Benzene	0.7	32.5	2.8	U
Toluene	5	286	U	U
Ethylbenzene	5	85.8	U	2.4
m,p-Xylene	5	322	U	U
o-Xylene	5	254	U	U
Isopropylbenzene	5	U	U	U
n-Propylbenzene	5	61.9	U	U
1,3,5-Trimethylbenzene	5	95.9	U	U
tert-Butylbenzene	5	U	U	U
1,2,4-Trimethylbenzene	5	221	U	U
sec-Butlybenzene	5	U	U	U
p-Isopropyltoluene	5	U	U	U
n-Butylbenzene	5	42.3	U	U
Napthalene	10	452	U	U

U - INDICATES COMPOUND WAS ANALYZED FOR BUT NOT DETECTED
J - INDICATES AN ESTIMATED VALUE

TABLE III

TCLP SEMI-VOLATILE ORGANIC COMPOUND SUMMARY
SOILS PORTION

COMPOUND	NYSDEC Guidance Values (ppb)	TEST PIT 6 (ppb)	TEST PIT 7 (ppb)	TEST PIT 8 (ppb)	TEST PIT 9 (ppb)	TEST PIT 10 (ppb)	TEST PIT 11 (ppb)	TEST PIT 12 (ppb)	TEST PIT 17 (ppb)	TEST PIT 21 (ppb)	TEST PIT 23 (ppb)
anthracene	50	U	U	U	U	U	U	U	U	U	U
fluorene	50	U	8.3J	7.6J	12	11	8.1J	U	U	U	U
phenanthrene	50	U	12	9.0J	16	13	11	U	U	U	U
pyrene	50	U	U	U	U	U	U	U	U	U	U
acenaphthene	20	U	7.5J	7.2J	10	9.2J	7.5J	U	U	U	U
benzo[a]anthracene	0.002	U	U	U	U	U	U	U	U	U	U
fluorene	50	U	U	U	U	U	U	U	U	U	U
benzo[b]fluoranthene	0.002	U	U	U	U	U	U	U	U	U	U
benzo[k]fluoranthene	0.002	U	U	U	U	U	U	U	U	U	U
benzo[a]pyrene	0.002	U	U	U	U	U	U	U	U	U	U
dibenzo[a,h]anthracene	50	U	U	U	U	U	U	U	U	U	U
benzo[g,h,i]perylene	0.002	U	U	U	U	U	U	U	U	U	U
indeno[1,2,3-cd]pyrene	0.002	U	U	U	U	U	U	U	U	U	U
napthalene	10	U	81	98	250	11	70	U	U	U	U
chrysene	0.002	U	U	U	U	U	U	U	U	U	U

U - INDICATES COMPOUND WAS ANALYZED FOR BUT NOT DETECTED
J - INDICATES AN ESTIMATED VALUE

TABLE IV

VOLATILE ORGANIC COMPOUND SUMMARY
SOILS PORTION

COMPOUND	NYSDEC Guidance Values (ppb)	TEST PIT 6 (ppb)	TEST PIT 7 (ppb)	TEST PIT 8 (ppb)	TEST PIT 9 (ppb)	TEST PIT 10 (ppb)	TEST PIT 11 (ppb)	TEST PIT 12 (ppb)	TEST PIT 17 (ppb)	TEST PIT 21 (ppb)	TEST PIT 23 (ppb)
tert-Butylmetyl ether	1000	U	U	U	U	U	U	U	U	U	U
Benzene	14	U	391	U	U	U	U	U	U	U	U
Toluene	100	U	684	2330	U	U	U	U	U	U	U
Ethylbenzene	100	942	1270	3100	2510	3150	2610	U	U	U	U
m,p-Xylene	100	U	2720	6860	1790	4180	2670	U	U	U	U
o-Xylene	100	U	2130	3970	U	2140	3900	U	U	U	U
Isopropylbenzene	100	U	332	648	U	603	1140	U	U	U	U
n-Propylbenzene	100	1680	1230	4990	U	3540	4610	U	U	U	U
1,3,5-Trimethylbenzene	100	1260	2000	4530	1300	5110	3520	U	U	U	U
tert-Butylbenzene	100	U	U	U	U	U	U	U	U	U	U
1,2,4-Trimethylbenzene	100	10600	7320	13300	8580	12300	6800	U	U	U	U
sec-Butlybenzene	100	U	U	U	U	U	U	U	U	U	U
p-Isopropyltoluene	100	U	U	U	U	U	U	U	U	U	U
n-Butylbenzene	100	U	4750	9680	2830	10600	5310	U	U	U	U
Napthalene	200	15200	15800	24200	10800	21900	9780	U	U	U	2.2

U - INDICATES COMPOUND WAS ANALYZED FOR BUT NOT DETECTED
J - INDICATES AN ESTIMATED VALUE

5.0 DISCUSSION OF RESULTS

The purpose of this Environmental Investigation was to determine the extent of petroleum contamination on the property located at 1025 South Park Avenue, Buffalo, New York. It appears that based on the analytical testing results, the extent of the petroleum contamination has been determined. It has been determined that the area of petroleum contamination at 1205 South Park Avenue, Buffalo, New York is approximately 2.18 acres. Based upon visual observations, it appears that the vertical migration of the petroleum contamination is restricted due to the presence of a clay layer. This clay layer was observed to be at an average depth of approximately 3 feet. Based up these figures, it is estimated that there is approximately 10557 cubic yards of contaminated material present. This estimated volume is predicated on measurements obtained during the course of this study and upon the assumption that the top 3 feet of soils are contaminated.

In addition the contaminated soils, it appears that some level of groundwater contamination is present. The contamination levels of the groundwater are in excess of New York State Department of Environmental Conservation Regulations. It should be noted that at this point it is unclear if a true groundwater problem exists. Because of the clay layer, it is quite possible that the water encountered is merely surface water that has been trapped by the clay layer. If that is indeed the case, then in theory, remedial efforts on the site's soil profile will have a positive impact on the trapped surface water.

It appears that the majority of the petroleum contamination that exists is confined to the delineated area outlined in site drawing found in Appendix A.

6.0 RECOMMENDATIONS

Since the nature and extent of the contamination has been determined, it is recommended that remedial action be taken to bring the site into compliance with the existing regulations. At this point, there are two methods that can be employed to bring the property at 1205 South Park Avenue into compliance with the New York State Department of Environmental Conservation's STARS Memo #1, the Petroleum Contaminated Soil Guidance Policy. The two most practical methods that can be employed to remediate the subject property are in-situ bioremediation and soil removal and disposal. The relative benefits and costs of each method will be discussed.

The first remedial option that may be considered is soil removal and disposal. If this option is selected, the contaminated soils will be physically excavated and transported to a disposal facility that is permitted to accept petroleum contaminated material. After the contaminated soils are removed, the entire excavated area would be replaced with an appropriate fill material. Based upon the volume of contamination present, it is estmated the approximate cost of this option to be $1,000,000.

This option is substantially more expensive than in-situ bioremediation but has a number of advantages. The first advantage is that the contaminated soils are removed and replaced with clean fill material. Should future environmental regulations enact stricter standards, the site would not be in contravention of such standards as the replacement material would be clean. The second advantage of this option is time. It is anticipated that this option could be completed in approximately 90 days. This option would facilitate the site's future development. Moreover, if this option provides the opportunity to configure the site to accomodate future development.

Despite the advantages of removal and disposal, a number of inherent disadvantages exist. The first disadvantage of this option is cost. The removal, disposal, and replacement of the contaminated materials is approximately three times as expensive as in-situ bioremediation. The second disadvantange that is inherent in this option is the contingent CERCLA liability. Should this material be disposed in a landfill permitted to accept petroleum contaminated materials, the possibility exists for the generators of the material (City of Buffalo Urban Renewal Agency) to be involved in future litigation should the facility that accepted this material become the target of a CERCLA cleanup. Unfortunately, there is no way to accurately forecast if the disposal facility that accepted this material would become the target of a CERCLA action.

The second remedial option that may be considered is in-situ bioremediation. If this option is selected, the contaminated soils will be innoculated with bacteria that would enhance the degredation of the petroleum contamination. Bioremediation technology has made significant advances in recent years and is considered a very effective means to mitigate petroleum contaminated soils. Based upon the volume of contamination present, it is estmated the approximate cost of this option to be $360,000.

This option is substantially less expensive than soil removal, disposal and replacement and has a number of advantages. The first advantage of this option is cost. The in-situ bioremediation of the contaminated materials is approximately one third as expensive as soil removal, disposal and replacement. The second advantange that is inherent in this option is the removal of contingent CERCLA liability. Since the contaminated materials will not be removed from the site, there is no potential for the City of Buffalo to be named a Potentially Responsible Party in some future CERCLA action.

Despite the advantages of in-situ bioremediation, some inherent disadvantages exist. The first disadvantage is that the contaminated soils are not removed and replaced with clean fill material. Should future environmental regulations enact stricter standards, and the in-situ bioremediation does not remove all of the contaminants, it is possible that future remedial efforts may be necessary. The second disadvantage of this option is time. It is anticipated that this option could take 6 to 18 months to complete. The success of bioremediation is contingent upon a number of factors. The most important consideration being weather. Biological degredation activity holds a direct relationship to ambient air temperature. As the ambient air temperature decreases, so does the microbiological activity. Consequently, microbiological activity peaks in the summer months and is minimal during the winter months. Therefore, the length of time to complete this project will be dependent upon the time of the year it is started as well the presence of conditions that will enhance microbiological activity.

From a practical perspective, both options will produce the same result. The major differences between the two options are cost and time. Satisfactory remedial results can be achieved in a short time frame at a relatively high cost. On the other hand, satifactory remedial may also be acheived at a much lower cost but over an extended period of time.

7.0 DECLARATION

This report is a Limited Environmental Investigation and other tests or further investigations are available and may be necessary to determine the extent of the environmental risks on site. The purpose of this report is to assist the customer in their evaluation of environmental risks. The customer will bear full responsibility for deciding at what level of testing and inspecting to base their decisions. This investigation has been performed for the benefit of the Buffalo Urban Renewal Agency, and the results and recommendations presented herein may be relied upon only by the Buffalo Urban Renewal Agency. Assignment of this report can only be made with the permission of Enasco, Inc.

8.0 CERTIFICATION

I hereby certify that I have examined the information and data obtained during this investigation of the subject property, and being familiar with the results of the environmental investigation, attest that this Environmental Investigation Report has been prepared in accordance with sound environmental auditing practices.

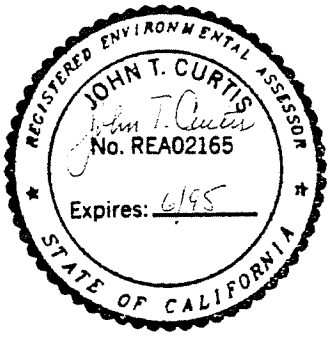
Submitted By: John T. Curtis

John T. Curtis, Registered Environmental Assessor - State of California

Environmental Chemist

Enasco, Inc.

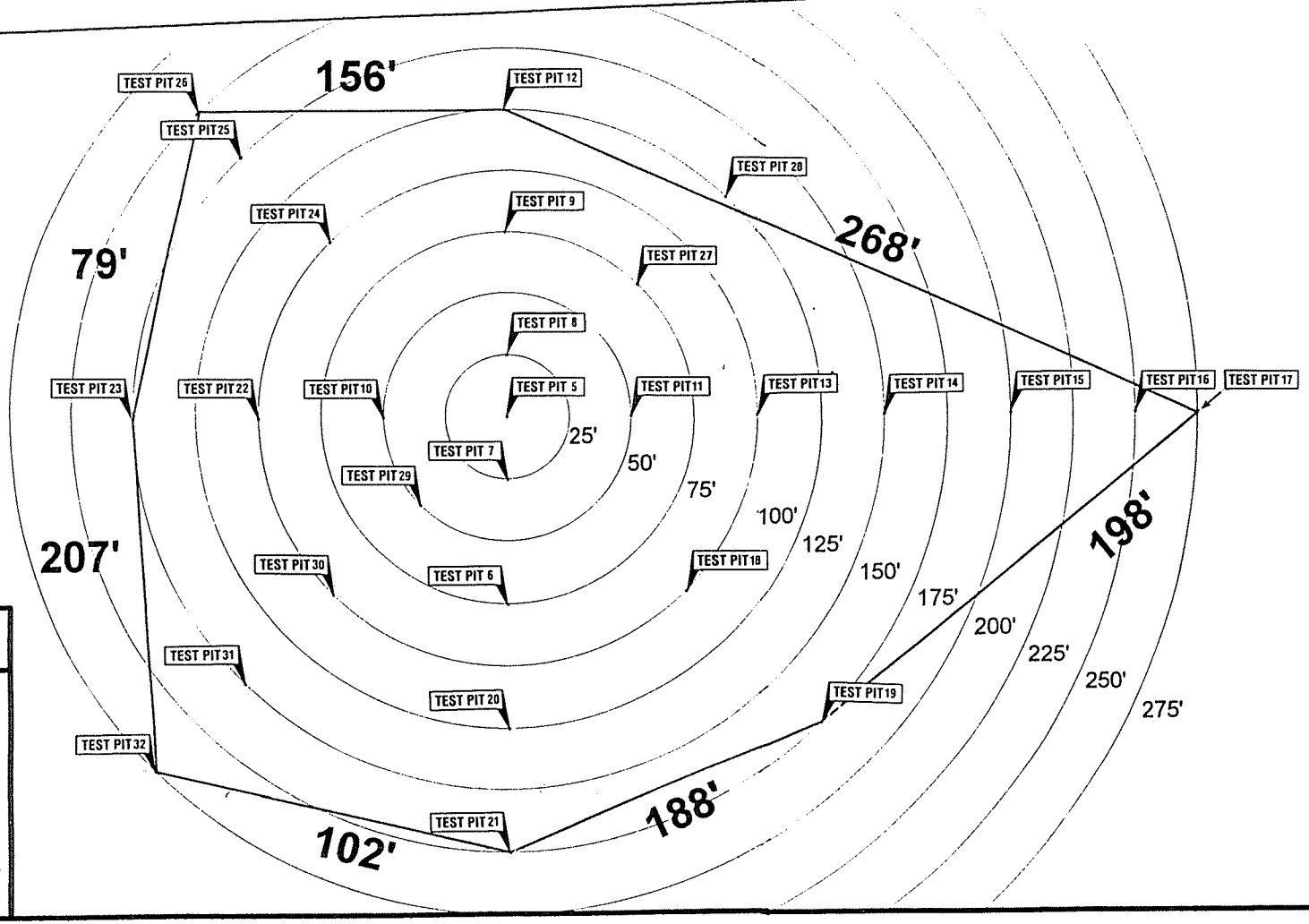
SEAL:



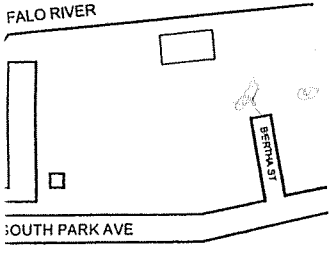
APPENDIX A

Site Map

BUFFALO RIVER



ENLARGED AREA



ENASCO INC.
00 Leslie Street, Buffalo, NY 14211

BUFFALO URBAN RENEWAL AGENCY

TEST PIT LOCATIONS

1025 SOUTH PARK AVENUE

APPENDIX B

Photographs

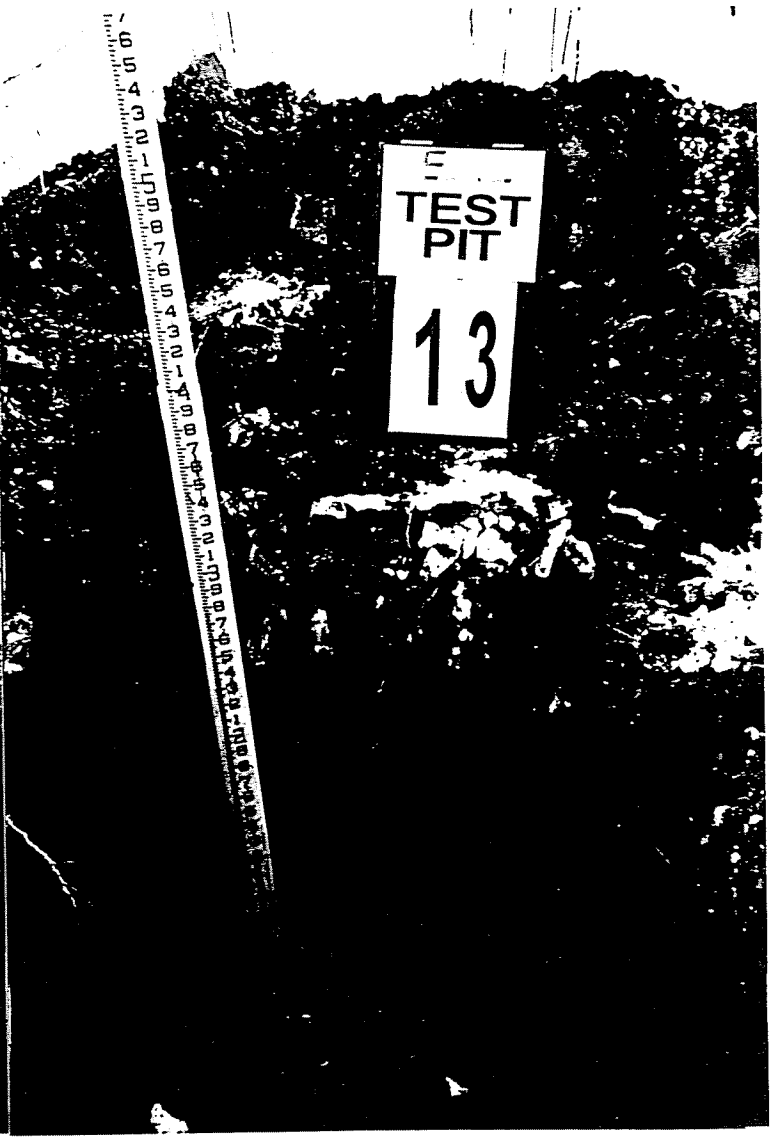


PHOTO 1 : Test Pit 12

PHOTO 2 : Test Pit 13

PHOTO 3 : Test Pit 14

PHOTO 4 : Test Pit 15

PHOTO 5 : Test Pit 16

PHOTO 6 : Test Pit 17

PHOTO 7 : Test Pit 18

PHOTO 8 : Test Pit 19

PHOTO 9 : Test Pit 20

PHOTO 10 : Test Pit 21

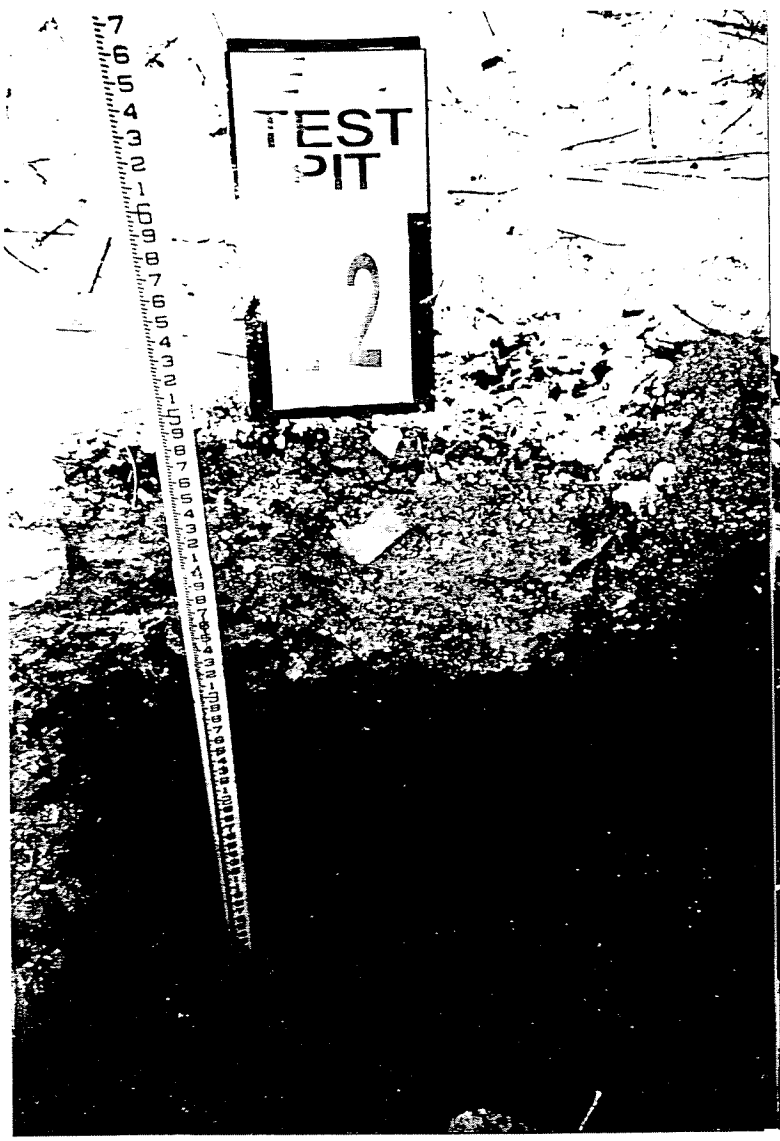


PHOTO 11 : Test Pit 22

PHOTO 12 : Test Pit 23

PHOTO 13 : Test Pit 24

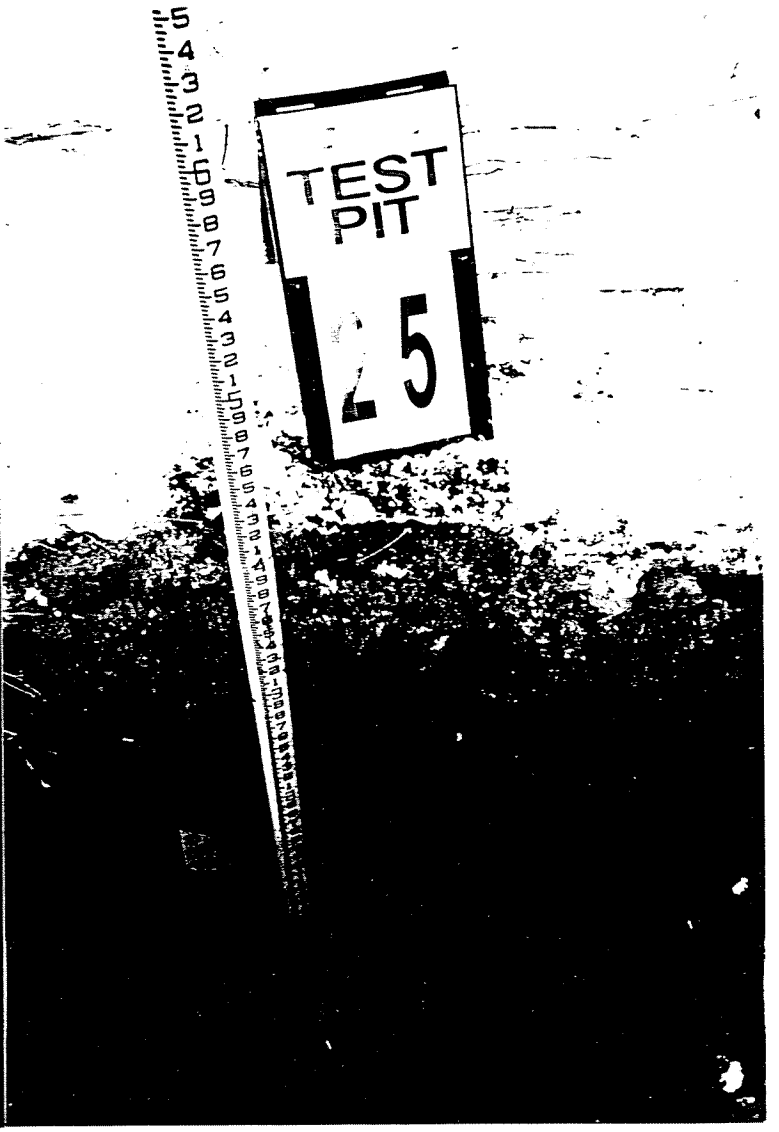


PHOTO 14 : Test Pit 25

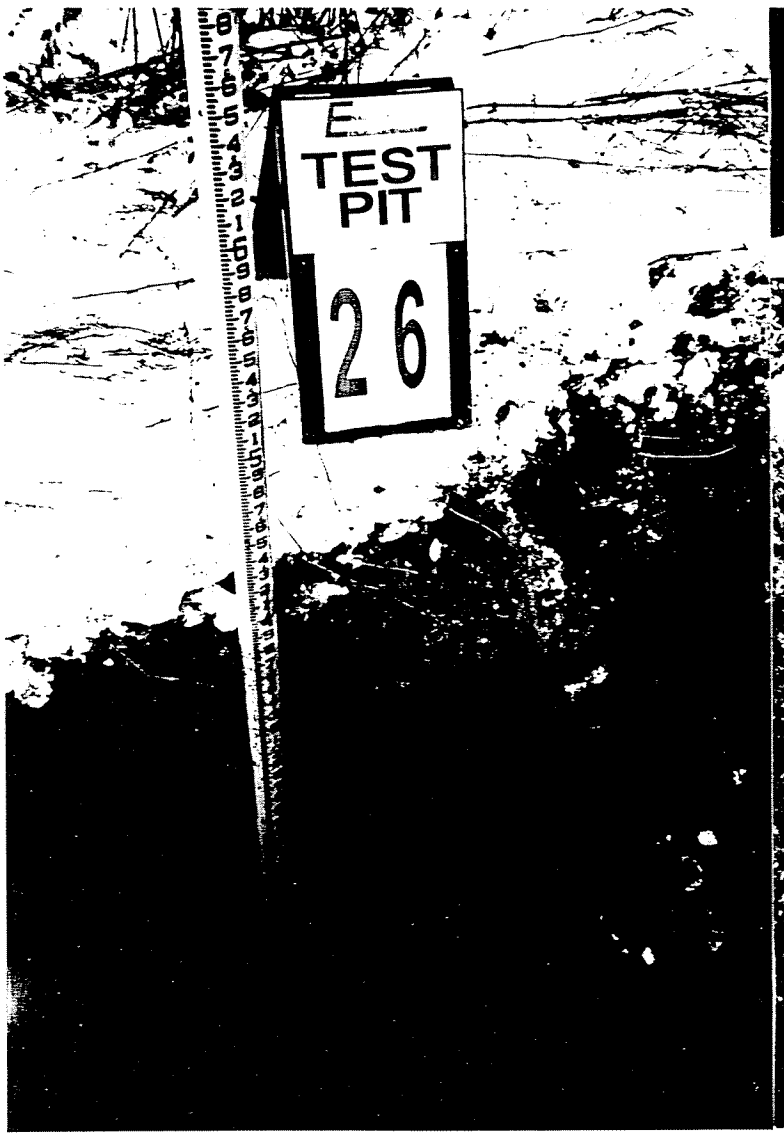


PHOTO 15 : Test Pit 26

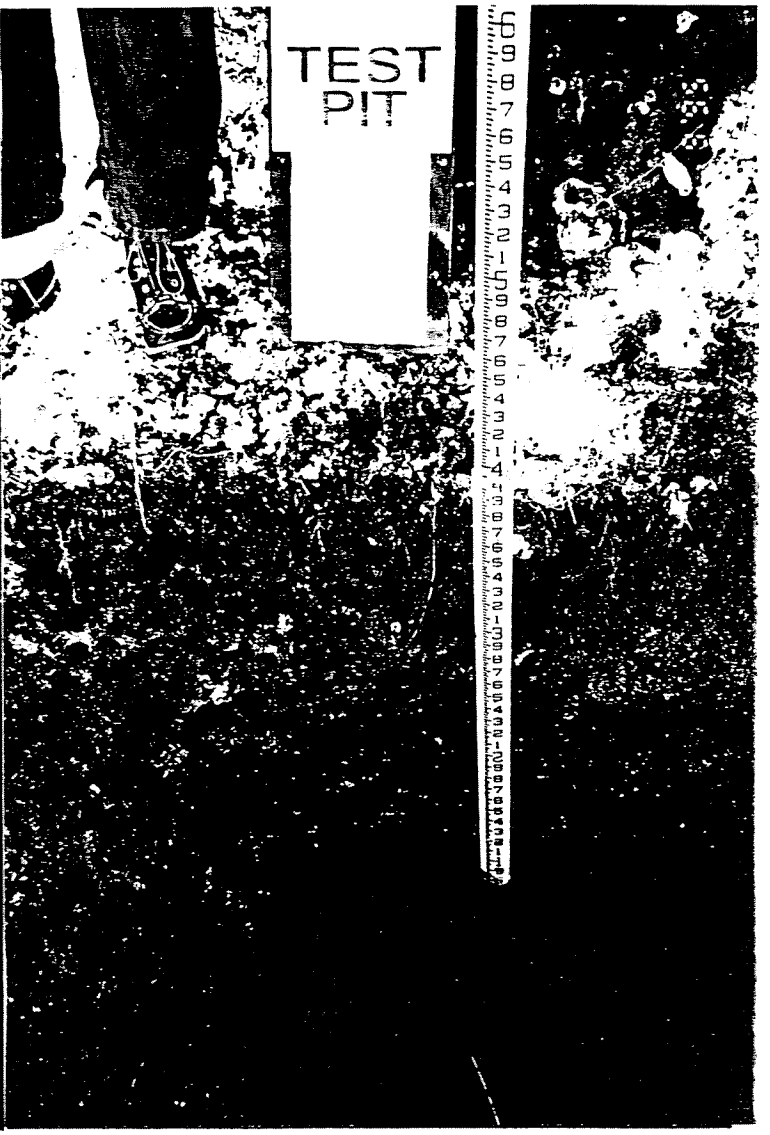


PHOTO 16 : Test Pit 27

PHOTO 17 : Test Pit 28

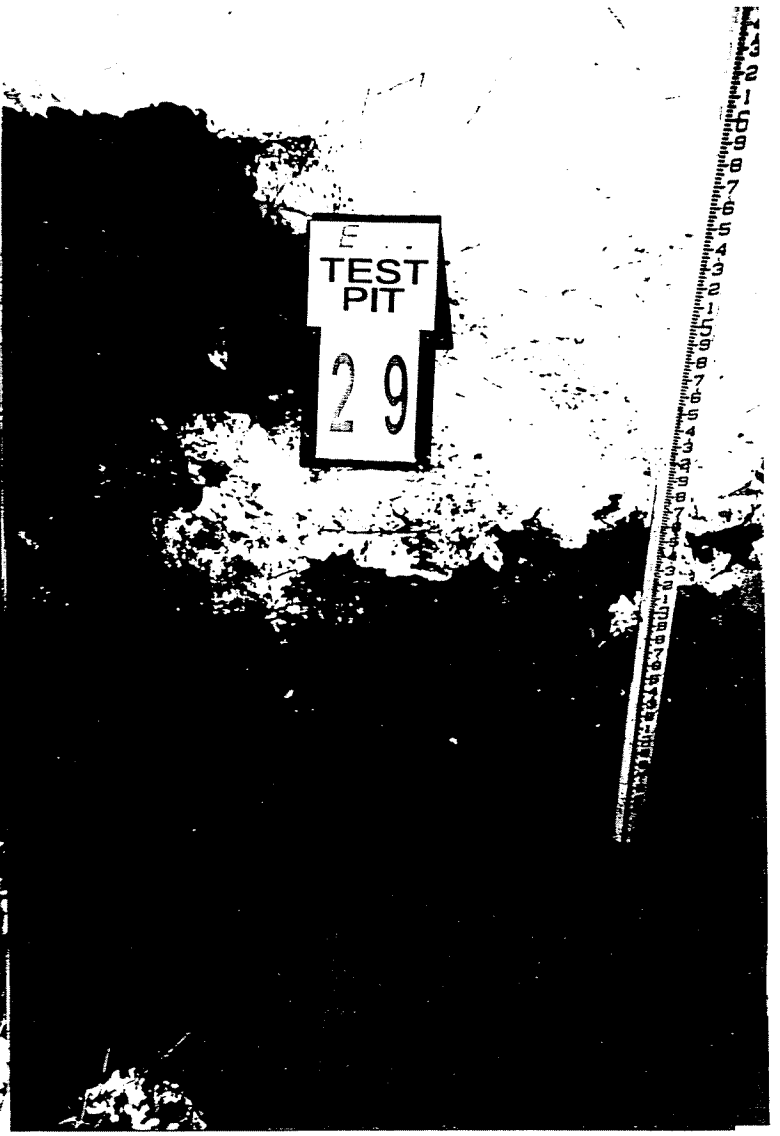


PHOTO 18 : Test Pit 29

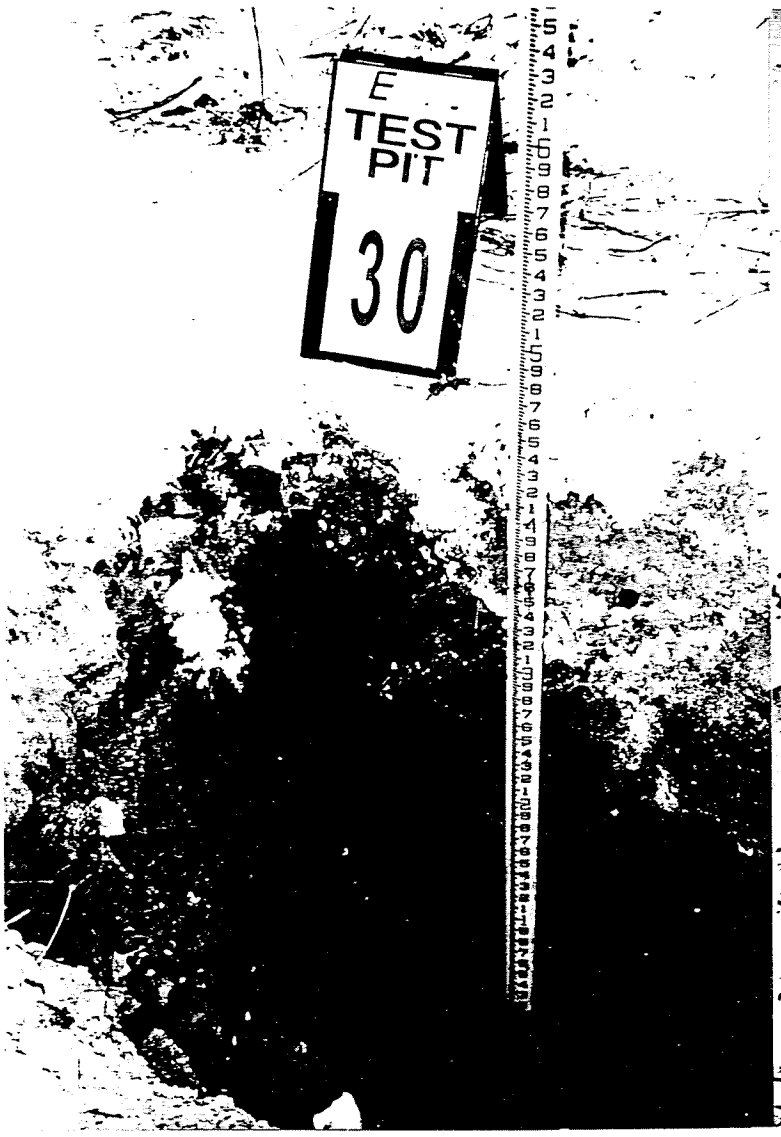


PHOTO 19 : Test Pit 30

PHOTO 20 : Test Pit 31

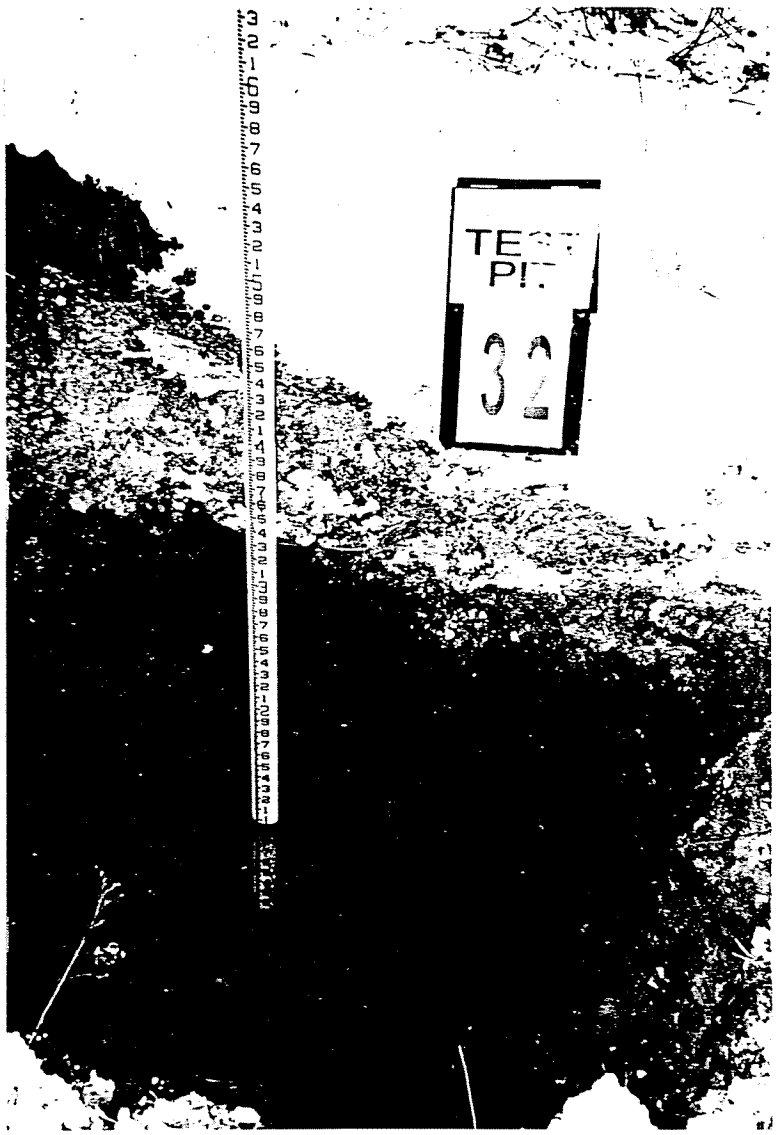


PHOTO 21 : Test Pit 32

APPENDIX C

Analytical Testing Results

WASTE STREAM TECHNOLOGY

Laboratory Chronicle

Report Date : 1/25/95
Group Number : 9501-013

Prepared For :
Mr. Jack Curtis
ENASCO
100 Leslie St.
Buffalo, New York 14211

Site : Grid

Field and Laboratory Information

Client Id	WST Lab #	Matrix	Date Sampled	Date Received	Time
S - 17	WS11932	Soil	1/9/95	1/10/95	1035
S - 12	WS11933	Soil	1/9/95	1/10/95	1035
S - 21	WS11934	Soil	1/10/95	1/10/95	1035
S - 23	WS11935	Soil	1/10/95	1/10/95	1035
S - 28	WS11936	Aqueous	1/9/95	1/10/95	1035
S - 23	WS11937	Aqueous	1/10/95	1/10/95	1035
Trip Blank	WS11938	Aqueous	1/10/95	1/10/95	1035
Sample Status Upon Receipt : No irregularities.					

Analytical Services

Analytical Parameters	Number of Samples	Turnaround Time
TCLP 8270	6	Standard
8021 STARS	7	Standard
TCLP Lead	6	Standard

Report Released By : Daniel W. Vou

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBER (ELAP) 11179

WASTE STREAM TECHNOLOGY

METHODOLOGIES

The specific methodologies employed in obtaining the analytical data reported are indicated on each of the result forms. The method numbers shown refer to the following U.S. Environmental Protection Agency Reference:

U.S. Environmental Protection Agency, "Method for Chemical Analysis of Water and Wastes," EPA 600/4-79-020, March 1983 Revision.

U.S. Environmental Protection Agency, "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods," Office of Solid Waste and Emergency Response, November 1986, SW-846, Third edition.

U.S. Environmental Protection Agency, Federal Register, 40 CFR Part 136, October 1984.

U.S. Environmental Protection Agency, Federal Register, 40 CFR Part 268, Appendix I, November 1986.

ORGANIC DATA COMMENT PAGE

Laboratory Name - Waste Stream Technology

USEPA Defined Organic Data Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicates the presence of a compound that meets identification criteria, but the result is less than the sample quantitation limit but greater than zero.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as the sample.

E - This flag identifies all compounds whose concentrations exceed the calibration range of the GC/MS instrument or that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

G - Matrix spike percent recovery is greater than expected upper limit of analytical performance.

L - Matrix spike percent recovery is less than the expected lower limit of analytical performance.

WASTE STREAM TECHNOLOGY

TCLP/8270 Base Neutral Extractables Report*

Site : GRID
Date Sampled : 1/9/95
3510 Extraction Date : 1/17/95
TCLP Extraction Date : 1/16/95
Date Analyzed : 1/18/95

Group Number : 9501-013
Date Received : 1/10/95 @ 1035
Sample Matrix : TCLP Extract
Report Units : PPB (ug/L)

	WST Lab ID		WS11932	WS11933	WS11934
	Client ID		S - 17	S - 12	S - 21
Compound	**Detection Limit**	**TCLP Limit****			
anthracene	10	10	U	U	U
fluorene	10	10	U	U	U
phenanthrene	10	10	U	U	U
pyrene	10	10	U	U	U
acenaphthene	10	10	U	U	U
benzo[a]anthracene	10	10	U	U	U
fluoranthene	10	10	U	U	U
benzo[b]fluoranthene	10	10	U	U	U
benzo[k]fluoranthene	10	10	U	U	U
benzo[a]pyrene	10	10	U	U	U
dibenzo[a,h]anthracene	10	10	U	U	U
benzo[g,h,i]perylene	10	10	U	U	U
indeno[1,2,3-cd]pyrene	10	10	U	U	U
naphthalene	10	10	U	U	U
chrysene	10	10	U	U	U
Surrogate Compound					
% Recovery		**QC Limit**			
Nitrobenzene-d5		35 - 114	94	99	99
2-Fluorobiphenyl		43 - 116	85	89	86
p-Terphenyl-d14		33 - 141	85	91	85

* NYSDEC Petroleum Contaminated Soil Compound List.

** TCLP limits are based on the attainable detection limits not necessarily those listed for DEC Guidance.

WASTE STREAM TECHNOLOGY

WASTE STREAM TECHNOLOGY

TCLP/8270 Base Neutral Extractables Report*

Site : GRID
Date Sampled : 1/9/95
3510 Extraction Date : 1/17/95
TCLP Extraction Date : 1/16/95
Date Analyzed : 1/18/95

Group Number : 9501-013
Date Received :1/10/95 @ 1035
Sample Matrix : TCLP Extract
Report Units : PPB (ug/L)

	WST Lab ID		WS11935	MB011795	
	Client ID		S - 23	NA	
Compound	Detection Limit	TCLP Limit**			
anthracene	10	10	U	U	
fluorene	10	10	U	U	
phenanthrene	10	10	U	U	
pyrene	10	10	U	U	
acenaphthene	10	10	U	U	
benzo[a]anthracene	10	10	U	U	
fluoranthene	10	10	U	U	
benzo[b]fluoranthene	10	10	U	U	
benzo[k]fluoranthene	10	10	U	U	
benzo[a]pyrene	10	10	U	U	
dibenzo[a,h]anthracene	10	10	U	U	
benzo[g,h,i]perylene	10	10	U	U	
indeno[1,2,3-cd]pyrene	10	10	U	U	
naphthalene	10	10	U	U	
chrysene	10	10	U	U	
Surrogate Compound					
% Recovery		QC Limit			
Nitrobenzene-d5		35 - 114	100	100	
2-Fluorobiphenyl		43 - 116	86	86	
p-Terphenyl-d14		33 - 141	83	87	

* NYSDEC Petroleum Contaminated Soil Compound List.

** TCLP limits are based on the attainable detection limits not necessarily those listed for DEC Guidance.

MB denotes Method Blank

NA denotes Not Applicable

WASTE STREAM TECHNOLOGY

WASTE STREAM TECHNOLOGY

TCLP/8270 Base Neutral Extractables Report*

Site : GRID
Date Sampled : 1/9/95
3510 Extraction Date : 1/11/95
TCLP Extraction Date : NA
Date Analyzed : 1/12/95

Group Number : 9501-013
Date Received : 1/10/95 @ 1035
Sample Matrix : Water
Report Units : PPB (ug/L)

	WST Lab ID		WS11936	WS11937
	Client ID		S - 28	S - 23
Compound	Detection Limit	TCLP Limit**		
anthracene	10	10	13	U
fluorene	10	10	14	U
phenanthrene	10	10	45	U
pyrene	10	10	13	U
acenaphthene	10	10	17	U
benzo[a]anthracene	10	10	4.8 J	U
fluoranthene	10	10	5.1 J	U
benzo[b]fluoranthene	10	10	U	U
benzo[k]fluoranthene	10	10	U	U
benzo[a]pyrene	10	10	2.1 J	U
dibenzo[a,h]anthracene	10	10	U	U
benzo[g,h,i]perylene	10	10	U	U
indeno[1,2,3-cd]pyrene	10	10	U	U
naphthalene	10	10	U	U
chrysene	10	10	8.9 J	U
Surrogate Compound				
% Recovery		QC Limit		
Nitrobenzene-d5		35 - 114	89	80
2-Fluorobiphenyl		43 - 116	89	85
p-Terphenyl-d14		33 - 141	77	79

* NYSDEC Petroleum Contaminated Soil Compound List.

** TCLP limits are based on the attainable detection limits not necessarily those listed for DEC Guidance.

WASTE STREAM TECHNOLOGY

5030/8021* Results Report

Site : Grid
Date Sampled : 1/9/1995
Analysis Date : 1/19/95

Group Number : 9501-013
Date Received : 1/10/95 @ 1035
Sample Matrix : Soil
Report Units : PPB (ug/kg)

	WST Lab ID	WS11932	WS11933	WS11934	WS11935
	Client ID	S-17	S-12	S-21	S-23
Compound	Detection Limit				
Methyl-t-butylether	10	U	U	U	U
Benzene	2.5	U	U	U	U
Toluene	3.4	U	U	U	U
Ethylbenzene	2.4	U	U	U	U
m,p- Xylene	4.5	U	U	U	U
o-xylene	4.0	U	U	U	U
Isopropylbenzene	2.4	U	U	U	U
n-Propylbenzene	2.8	U	U	U	U
1,3,5-Trimethylbenzene	1.6	U	U	U	U
t-Butylbenzene	2.1	U	U	U	U
1,2,4-Trimethylbenzene	2.1	U	U	U	U
sec-Butylbenzene	6.5	U	U	U	U
p-isopropyltoluene	1.9	U	U	U	U
n-Butylbenzene	3.2	U	U	U	U
Naphthalene	1.9	U	U	U	**2.2**
Detection Limit Multiplier		1	1	1	1
Percent Solids		79	86	84	87
Surrogate Compound					
% Recovery of a,a,a-Trifluorotoluene	QC Limits 83 - 119	105	107	101	101

* NYSDEC Petroleum Contaminated Water/Soil Compound List.

WASTE STREAM TECHNOLOGY

WASTE STREAM TECHNOLOGY

5030/8021* Results Report

Site: Grid
Date Sampled :1/9/95
Date Extracted : NA
Date Analyzed : 1/17/95

Group Number : 9501-013
Date Received : 1/10/95 @ 1035
Sample Matrix : Water
Report Units : PPB (ug/L)

	WST Lab ID	WS11936	WS11937	WS11938	MB011795
	Client ID	S-28	S-23	Trip Blank	NA
Compound	Detection Limit				
tert-Butylmethyl ether	10	U	U	U	U
Benzene	2.5	**2.9**	U	U	U
Toluene	3.4	U	U	U	U
Ethylbenzene	2.4	U	**2.4**	U	U
m,p- Xylene	4.5	U	U	U	U
o-xylene	4.0	U	U	U	U
Isopropylbenzene	2.4	U	U	U	U
n-Propylbenzene	2.8	U	U	U	U
1,3,5-Trimethylbenzene	1.6	U	U	U	U
tert-Butylbenzene	2.1	U	U	U	U
1,2,4-Trimethylbenzene	2.1	U	U	U	U
sec-Butylbenzene	6.5	U	U	U	U
p-Isopropyltoluene	1.9	U	U	U	U
n-Butylbenzene	3.2	U	U	U	U
Naphthalene	1.9	U	U	U	U
Detection Limit Multiplier**		1	1	1	1
Surrogate Compound % Recovery	**QC Limit**				
a,a,a-Trifluorotoluene	83 - 117	107	107	106	105

* NYSDEC Petroleum Contaminated Water/Soil Compound List.

MB denotes Method Blank.
NA denotes Not Applicable.

Waste Stream Technology Inc.

TCLP 3015/6010 ICP Result Report

Site : Grid
Date Sampled : 1/9/95
Date Received : 1/10/95 @ 1035
TCLP Extraction Date : 1/11/95

Group Number : 9501-013
Report Units : mg/L (PPM)
Matrix : TCLP Extraction Fluid

WST Lab ID	Client ID	Date Digested	Date Analyzed	Lead
MB011195	NA	1/12/95	1/13/95	< 0.132
WS11932	S-17	1/12/95	1/13/95	< 0.132
WS11933	S-12	1/12/95	1/13/95	< 0.132
WS11934	S-21	1/12/95	1/13/95	0.186
WS11935	S-23	1/12/95	1/13/95	< 0.132

MB denotes Method Blank.

NA denotes Not Applicable.

Pb Detection Limit: 0.132 mg/L

WASTE STREAM TECHNOLOGY

Waste Stream Technology Inc.

3015 / 6010 ICP Result Report

Site : Grid
Date Sampled : 1/9/95
Date Received : 1/10/95 @ 1035

Group Number : 9501-013
Report Units : mg/L
Matrix : Aqueous

WST Lab ID	Client ID	Extraction Date	Analysis Date	Total Lead
WS11936	S-28	1/12/95	1/13/95	< 0.132
WS11937	S-23	1/12/95	1/13/95	< 0.132
MB011295	NA	1/12/95	1/13/95	< 0.132

Total Pb Detection Limit : 0.132 mg/L

MB denotes Method Blank.

NA denotes Not Applicable.

WASTE STREAM TECHNOLOGY

WASTE STREAM TECHNOLOGY

302 GROTE STREET
BUFFALO, NY 14207
(716) 876-5290

9501-013
1/2

CHAIN OF CUSTODY RECORD

PROJECT NO: B0841 SITE NAME: GRID

SAMPLERS (SIGNATURE): Jack Carter

SAMPLE NO.	DATE	TIME	COMP	GRAB	MATRIX	SAMPLE LOCATION	SIZE & NO. OF CONTAINERS	TCLP 8270	8021 STARS	TCLP LEAD					PRESERVATIVES	REMARKS
1	1/9/95	3:08	X		SOIL	S-17	1-16oz	X		X						WS11932
1	1/9/95	3:08	X		SOIL	S-17	1-4oz		X							
2	1/9/95	3:26	X		SOIL	S-12	1-16oz	X		X						WS11933
2	1/9/95	3:26	X		SOIL	S-12	1-4oz		X							
4	1/10/95	8:57	X		SOIL	S-21	1-16oz	X		X						WS11934
4	1/10/95	8:57	X		SOIL	S-21	1-4oz		X							
6	1/10/95		X		SOIL	S-23	1-16oz	X		X						WS11935
6	1/10/95		X		SOIL	S-23	1-4oz		X							
3	1/9/95	3:42		X	WATER	S-28	1-1L	X								
3	1/9/95	3:42		X	WATER	S-28	1-250ml			X						WS11936
3	1/9/95	3:42		X	WATER	S-28	2-40ml		X							
5	1/10/95	9:35		X	WATER	S-23	1-1L	X								WS11937
5	1/10/95	9:35		X	WATER	S-23	1-250ml			X						

RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)
Jack Carter	10 Jan 95 10:35				
RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)
RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)	DATE/TIME	REMARKS	

Distribution Original accompanies shipment. Copy to coordinator field files

LAB USE: REFRIGERATOR # _____ SHELF # _____

WASTE STREAM TECHNOLOGY

302 GROTE STREET
BUFFALO, NY 14207
(716) 876-5290

9501-013
2/2

CHAIN OF CUSTODY RECORD

PROJECT NO: B0841 SITE NAME: GRID

SAMPLERS (SIGNATURE): Frank Curtin

SAMPLE NO.	DATE	TIME	COMP	GRAB	MATRIX	SAMPLE LOCATION	SIZE & NO. OF CONTAINERS	8021-STARS	8240					PRESERVATIVES	REMARKS
S	1/10/95	9:35		X	WATER	S-23	2-40ml								WS11937 (Cox't)
					AQ.	TRIP Blank			4						WS11938

RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)
Frank Curtin	10 Jan 95 10:35				
RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)
RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY (SIGNATURE)	DATE/TIME	REMARKS	
				STARS, 1x	

Distribution Original accompanies shipment. Copy to coordinator field files

LAB USE: REFRIGERATOR # _____ SHELF # _____