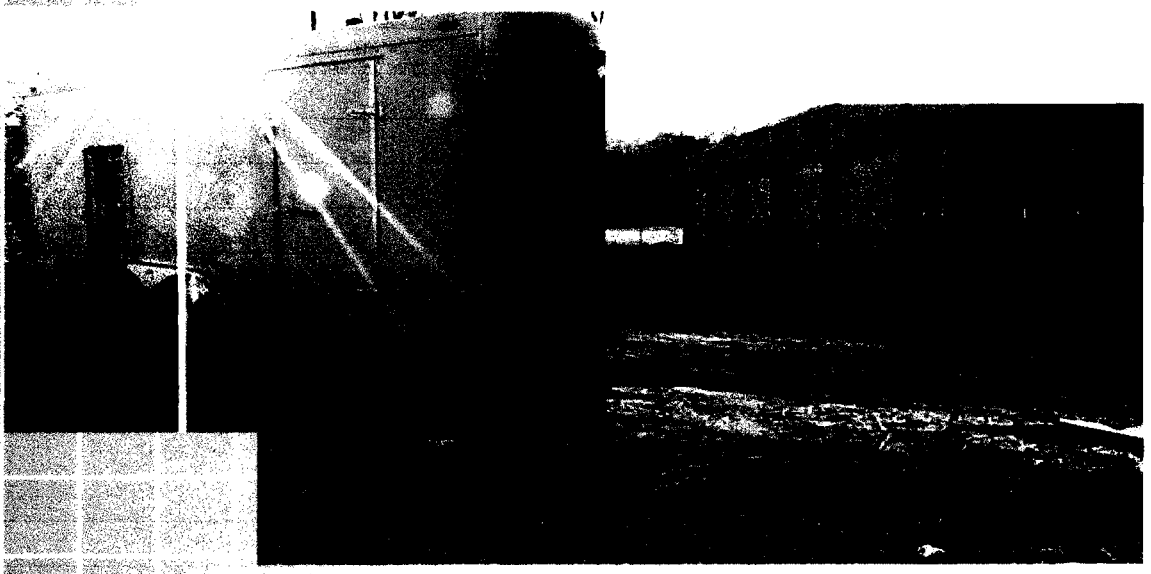
NEW YORK STATE DEPARTMENT OF TRANSPORTATION

Albany, New York

Harrison Subresidency
Town of Harrison
Westchester County, New York

D008873
PIN 8807.31.301

Air Sparging and Soil Vapor Extraction System



Operation and Maintenance Report for January 2002

July 2002

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Environmental Science & Engineering Consultants
One Blue Hill Plaza • Pearl River, New York 10965

Lawler, Matusky & Skelly Engineers LLP
Environmental Science & Engineering Consultants

7/24/02
Project No. 446-311

Mr. John LaBarge
Acting Director, Consultant Management Bureau
NYS Dept. of Transportation
1220 Washington Avenue
Albany, NY 12232

Attn: Greg Menard

Re: **D012589, PIN 8007.31.101**
Harrison Petroleum Spill – Remediation
Town of Harrison, Westchester County, New York
Air Sparging/Soil Vapor Extraction System
Monthly Operations & Maintenance Report #13 (Jan 2002)

Dear Mr. Menard:

Lawler, Matusky & Skelly Engineers LLP (LMS) is pleased to submit the subject report for your use. The purpose of this report is to present the information necessary to assess the operation of the air sparging/soil vapor extraction system, to track the progress of the remediation, and to make recommendations to increase operating efficiency or lower operating costs.

The soil vapor extraction system was operated continuously in January 2002 until January 18, when it was shut down to facilitate groundwater monitoring. The air sparge system had been shut down since November 8, 2001 in preparation for January 2002 groundwater monitoring, and remained off-line through the entire month of January. The third groundwater monitoring round was conducted on January 23 and 24 and the results are presented in this report.

Groundwater contaminant concentrations remain low across the site. Now would be a prudent time to begin discussions with the New York State Department of Environmental Conservation (NYSDEC) about transitioning from mechanical remediation to natural attenuation, and eventual site closure. We recommend that the New York Department of Transportation (NYSDOT) arrange a formal conversation with NYSDEC, wherein NYSDOT would propose continued operation of the air sparge/SVE system until the beginning of August 2002, with the next (fourth) groundwater sampling round to be conducted in late October 2002. We would be pleased to support you in this dialogue with NYDEC. The Air

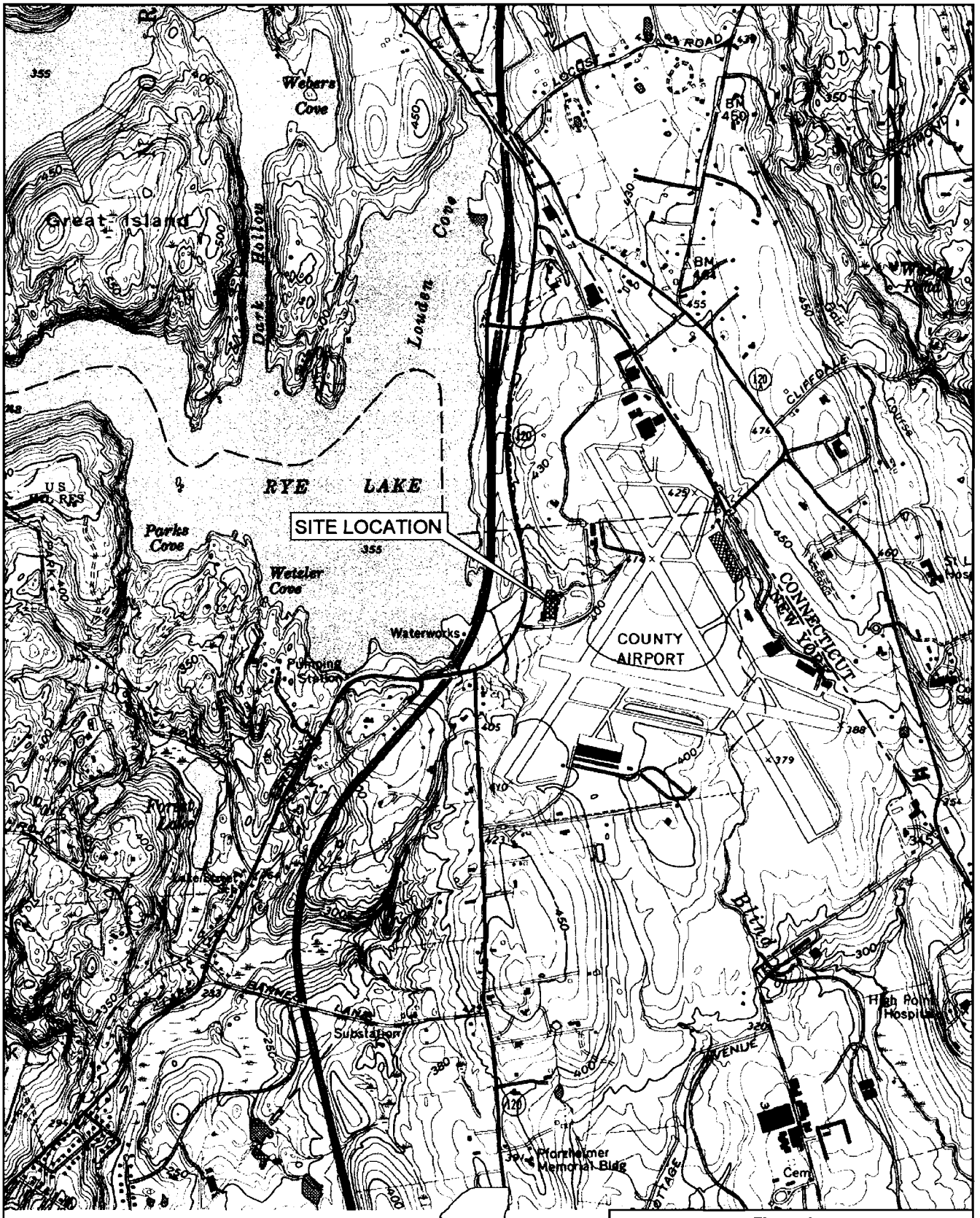
Sparge/SVE system would then continue to remain off-line until after the fourth round results are analyzed. If concentrations remain at or below current levels, then with the approval of NYSDEC the system would remain off. A schedule for post-remedial groundwater monitoring toward site closure would be proposed at that time.

If you have any questions, please call Ruth Fritsch or me at (845) 735-8300.

Very truly yours,

George G. Gattullo

cc: David Wohlbach, NYSDOT (6 copies)
Mauricio Roma, Environmental Analysis Bureau (1 copy)



Map source: USGS 7.5 minute quadrangle map, Glenville Conn. NY, 1960
Photorevised 1971.

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Figure 1

Site Location

HARRISON SUBRESIDENCY
NYSDOT PIN A98906.701

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

List of Tables

List of Figures

CHAPTER 1

SUMMARY OF PERFORMANCE MONITORING THIRD ROUND (JANUARY 2002)

1.1 OBJECTIVE

The third round sampling was conducted on January 23 and 24, 2002. The objectives of this sampling event were:

- to assess the remediation efforts of the air sparge/soil vapor extraction (AS/SVE) system thus far and evaluate the potential for discontinuing of mechanical remediation;
- to assess the radius of influence (ROI) afforded by the existing air sparge wells and to assess the performance of the three (out of four) operational air sparge wells;
- to qualitatively assess the level of biodegradation present;
- to assess whether rebounding of contaminant concentrations has occurred.

1.2 SAMPLING PLAN

Monitoring wells 1 through 9 and sparge wells SP-1 through 4 were sampled and analyzed for benzene, toluene, ethyl-benzene, xylenes (BTEX), methyl tert-butyl ether (MTBE), and naphthalene in addition to standard water chemistry parameters (to assess the extent of biodegradation). Table 1-1 shows the sampling matrix.

1.3 SAMPLING METHODS

The air sparge system was shut down approximately 11 weeks in advance of this third round sampling event, the soil vapor extraction system was shut down approximately one week in advance.

Static water levels were first measured in each of the wells; the results are summarized in Table 1-2. Groundwater samples were collected by purging each well a minimum of three well volumes or purging the well dry and allowing the well to recover prior to

TABLE 1-1
Harrison Subresidency Spill Site
Harrison, New York
Compliance Groundwater Sampling Matrix

Parameter	Matrix	Container	Analytical Method	Preservative	Holding Time	Number of samples	Remarks
BTEX MTBE Naphthalene	Aqueous	3, 40 ml glass vials with teflon caps and septa	USEPA 8260B	cool 4 C	7 days	15	
Iron (total)	Aqueous	500 mL polyethylene	USEPA 6010B	HNO_3, cool 4 C	28 days	15	
Iron* (disolved)	Aqueous	500 mL polyethylene	USEPA 6010B	cool 4 C	ASAP	15	To be filtered and preserved by Mitkem
Nitrate-nitrite Nitrogen	Aqueous	250 mL polyethylene	USEPA 353.2	$H2SO_4$ to pH<2, cool to 4 C	28 days	15	
Sulfate	Aqueous	500 mL polyethylene	USEPA 9056	cool 4 C	28 days	15	
TOC	Aqueous	1, 40 mL glass vials with teflon caps and septa	USEPA 415.1	HCl to pH<2, cool to 4 C	28 days	15	
CO_2	Aqueous	*250 mL Amber (narrow top) with teflon caps and septa	USEPA 4500-CO2D	cool 4 C	24 hours	15	*Fill jar all the way to the top.
Trip Blank	Aqueous	2, 40 ml glass vials with teflon caps and septa	USEPA 8260B	cool 4 C	7 days	1	Prepared by Mitkem

sample collection. Purging was performed by submersible low-flow pump, or by hand-bailing the well with dedicated disposal bailers. Groundwater samples were collected using 0.5-in. or 1.5-in. diameter dedicated disposable bailers. Temperature, pH, conductivity, salinity, oxidation-reduction potential (ORP), dissolved oxygen (DO) and turbidity were recorded during well purging and before sampling. These standard parameters were recorded in the well sampling logs, which are located in the Attachment B. Dissolved oxygen was measured in the field and was recorded during sample collection. The meter was decontaminated and re-calibrated between samples.

The samples were transferred directly into the sample container and labeled with the site name, job number, sample location/identification, date, time, sampler, and parameters for analysis. The samples were then placed into coolers, cooled to less than 4°C, and submitted under chain-of-custody protocol to a New York State Department of Health (NYSDOH) certified laboratory (Mitkem Corporation, Rhode Island). The results were received from the laboratory on February 11 and 27, 2002.

1.4 SUMMARY OF ANALYTICAL RESULTS

The analytical data from the four rounds of groundwater samples to date are presented in Attachment A. BTEX and MTBE results are specifically summarized in Table 1-3. Figure 1-1 provides a graphical representation of the BTEX and MTBE results.

In the past, there have been some anomalies in the MTBE data, which resulted in concentrations that were biased high due to gas chromatography (GC) shifts. For example, a comparison of the 2000 MTBE sampling results to the 1999 results suggested a marked increase in MTBE concentrations. Since such a large increase in MTBE concentrations seemed unlikely, the laboratory was contacted to verify sample results. The laboratory noted that groundwater samples collected for volatile organic compounds (VOC) analyses were previously analyzed using GC methodology. However, as a result of elevated analyte concentrations and what the laboratory has described as complex chromatograms, two samples, MW-3 and MW-8 were also analyzed by GC mass spectrometry (MS) methods. Subsequent review of the GC/MS results indicated that MTBE was detected in MW-8 at 2.86 µg/L and not detected in MW-3; the initial GC results indicated that MW-8 contained 68 µg/L and MW-3 had 50 µg/L of MTBE. The difference in the reported GC results and the GC/MS results was attributed by the contract laboratory to a minor retention time shift on the GC chromatograms. The

TABLE 1-2
STATIC WATER LEVEL & DEPTH TO BOTTOM MEASUREMENTS
Harrison Subresidency
1/23/02

Well ID	DTW (Jan 2002)	DTW (May 2001)	DTW (Jan 2001)	DTW (May 2000)	DTW (March 1999)	DTW (MAY 1997)	DTW (Nov 1995)	DTB
PC-1	NA	6.55	4.58	5.22	3.95	NA	NA	6.87
SP-1	5.60	4.46	7.25	12.86	2.70	3.04	NA	19.18
SP-1B	NA	4.83	NA	4.58	2.64	NA	NA	26.77
SP-2	8.17	6.87	NA	9.00	5.82	5.94	NA	18.48
SP-3	8.00	6.78	NA	6.89	6.00	NA	NA	19.95
SP-4	6.42	4.40	NA	17.42	3.54	NA	NA	20.90
MW-1	4.49	3.37	2.87	2.78	1.23	1.70	2.92	8.58
MW-2	6.00	4.89	4.57	3.86	2.44	NA	4.53	10.79
MW-3	6.00	4.88	4.70	4.18	2.91	3.08	4.94	10.75
MW-4	5.98	4.95	4.73	4.31	3.30	NA	4.82	11.62
MW-5	6.35	5.10	4.89	4.87	3.68	NA	5.26	11.00
MW-6	7.13	5.20	5.26	4.95	4.20	NA	5.43	14.77
MW-7	6.97	4.56	3.90	3.60	2.32	2.67	4.47	14.67
MW-8	8.29	6.87	7.36	6.86	5.98	6.40	7.21	14.57
MW-9	8.43	7.23	7.25	6.61	6.27	NA	NA	13.74

DTB = depth to bottom (feet)
DTW = depth to water (feet)
Shaded values indicate that well recharge was likely adversely influenced and DTW is not representative.
NA = not available

chromatograms for the remaining wells also exhibited a complexity similar to those of MW-3 and MW-8; however, GC/MS confirmations were not performed on these samples at that time.

The reported values for MTBE listed in Attachment A for the May 2000 and the January 2001 data likely have a positive bias similar to that of MW-3 and MW-8. Therefore, it was likely that MTBE, if present at all, was only present in trace amounts in the past sampling events. GC/MS data from the second and third rounds confirms this. MTBE concentrations detected in the second round were well below the target level of 50 µg/L (MW-7, SP-2 and SP-3 exhibited MTBE at concentrations of less than 20 µg/L). MTBE was not detected in any of the samples collected in January 2002. Overall, second and third round results indicate that the MTBE target effluent goal of 100 µg/L was met at all sampled locations.

Reported values for BTEX continue to show an overall decrease across the site. In order to assess the effects of rebounding, the second round groundwater samples were collected shortly after the remedial system was shut down, as a result these values are probably biased low (see Section 1.5).

BTEX and MTBE concentrations, where notable, are summarized on a per-well basis below:

MW-1 BTEX concentration was non-detectable. MW-1 is located upgradient of the known plume area. First round sampling revealed MTBE at a concentration of 54 µg/L. As described above, this result is questionable; second and third round results show MTBE to be non-detectable in MW-1.

MW-2 BTEX concentration was non-detectable. MW-2 had a baseline BTEX concentration of 16.6 µg/L and a first round concentration of 4 µg/L.

MW-3 BTEX concentration was 156 µg/L (down from 174 µg/L in the second round). MW-3 is located in the center of the plume. The baseline BTEX concentration was 960 µg/L. First round results showed BTEX at 2.0 µg/L, which demonstrates that some rebounding did occur in the second and third rounds. Most of the remaining contamination is in the form of xylene, which is the most

difficult compound of the BTEX group to remediate, so these results are not unexpected. An 84% removal of BTEX has been achieved in MW-3 thus far.

MW-4 BTEX concentration was non-detectable. The baseline concentration was 39.4 µg/L.

MW-5 BTEX concentration was 4 µg/L (down from 233 µg/L in the second round). MW-5 is located in what was previously the center region of the plume, but is currently somewhat side-gradient to the most contaminated region (see Figure 1-2). The absence of rebounding in the third round, however, indicates that the implemented remedial actions have been effective at this well. All of the remaining BTEX contamination at this well is xylene. A near 100% removal of BTEX has been achieved in MW-5 thus far.

MW-6 BTEX concentration was 30 µg/L (up from 6 µg/L in the second round). MW-6 has not exhibited BTEX concentrations near or above the target criteria of 100 µg/L since the May 2000 baseline sampling.

MW-7 BTEX concentration has remained non-detectable, since the baseline sampling (May 2000), when it was 17.9 µg/L.

MW-8 BTEX concentration was 7 µg/L (down from 36 µg/L in the second round). The baseline BTEX concentration was 396 µg/L. First round results showed BTEX concentrations were non-detectable, which demonstrates that some rebounding did occur in the second and third rounds. All of the remaining BTEX contamination is xylene. A 98% removal of BTEX has been achieved in MW-8 thus far.

MW-9 This well continues to show non-detectable levels of BTEX and MTBE.

PC-1 This well was not sampled in the second and third rounds because the well was dry and a representative sample could not be obtained. The baseline BTEX and MTBE concentrations in this well were non-detectable.

SP-1 BTEX concentration was 3 µg/L (up from non-detectable in the second round, but still well below the target criteria of 100 µg/L). The baseline BTEX

concentration was 31 µg/L and well SP-1 has exhibited BTEX concentrations of non-detectable or near non-detectable for every subsequent sampling round.

SP-1B This well was not sampled in the third round because the well was not accessible. Well SP-1B has historically exhibited BTEX and MTBE concentrations of 5 µg/L or less.

SP-2 BTEX concentration was 58 µg/L, which represents an overall decrease in BTEX since the baseline study, when it was 217 µg/L. The second round BTEX results were non-detectable. Well SP-2 is about 80 feet downgradient to the center of the plume. The increase in concentration from the second round may be attributable to the longer elapsed time between system shutdown and groundwater sampling that was allowed for the third round. A 73% removal of BTEX has been achieved in SP-2 thus far.

SP-3 BTEX concentration was non-detectable (down from 15 µg/L in the second round). The baseline BTEX concentration was 586 µg/L. A near 100% removal of BTEX has been achieved in well SP-3 thus far

SP-4 BTEX concentration was 5 µg/L (up from non-detectable in the second round, but still well below the target criteria of 100 µg/L). The baseline BTEX concentration was 75 µg/L. A 93% removal of BTEX has been achieved in well SP-3 thus far.

During the second and third round, naphthalene was detected in some samples while conducting analysis for volatile compounds via Method 8260B (see Section 1.5). Due to the nature of this analytical method with respect to naphthalene, however, these results are considered suspect, and quantities obtained via Method 8270 should take precedence. This phenomenon is evident when comparing these results to those obtained using both methods during the second round. Further analysis for naphthalene will be conducted via Method 8270.

Attachment D presents the raw analytical data.

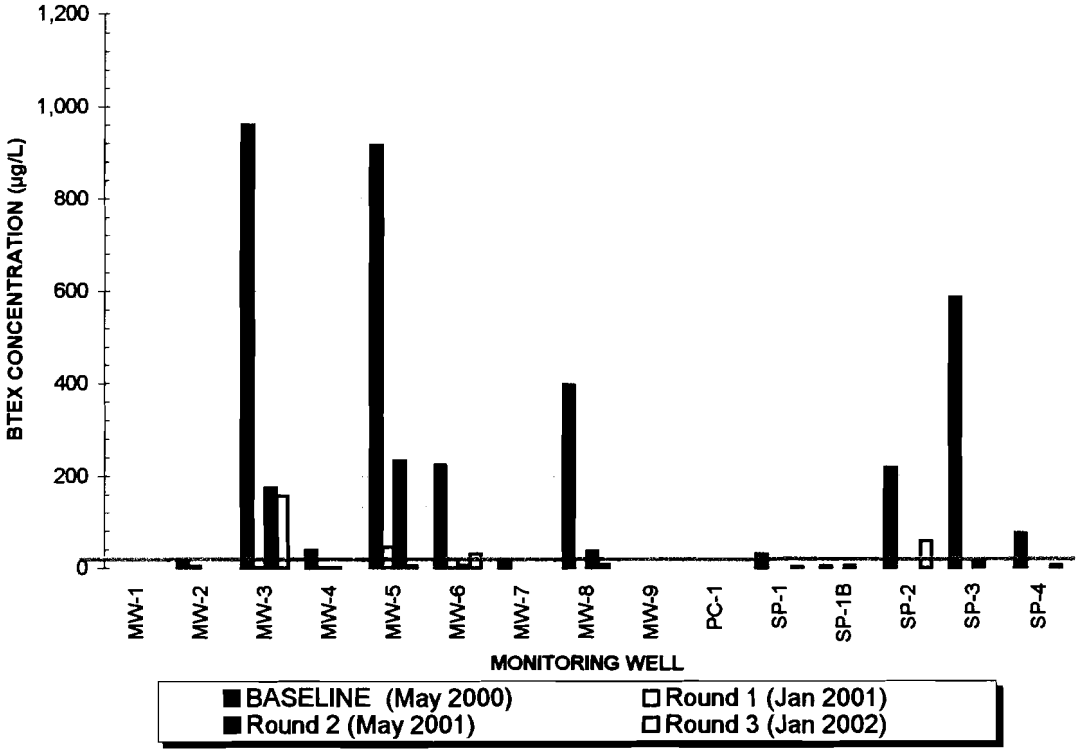
TABLE 1-3
MONITORING WELL DATA SUMMARY
ROUND 3 (JAN 2001)
Harrison Subresidency

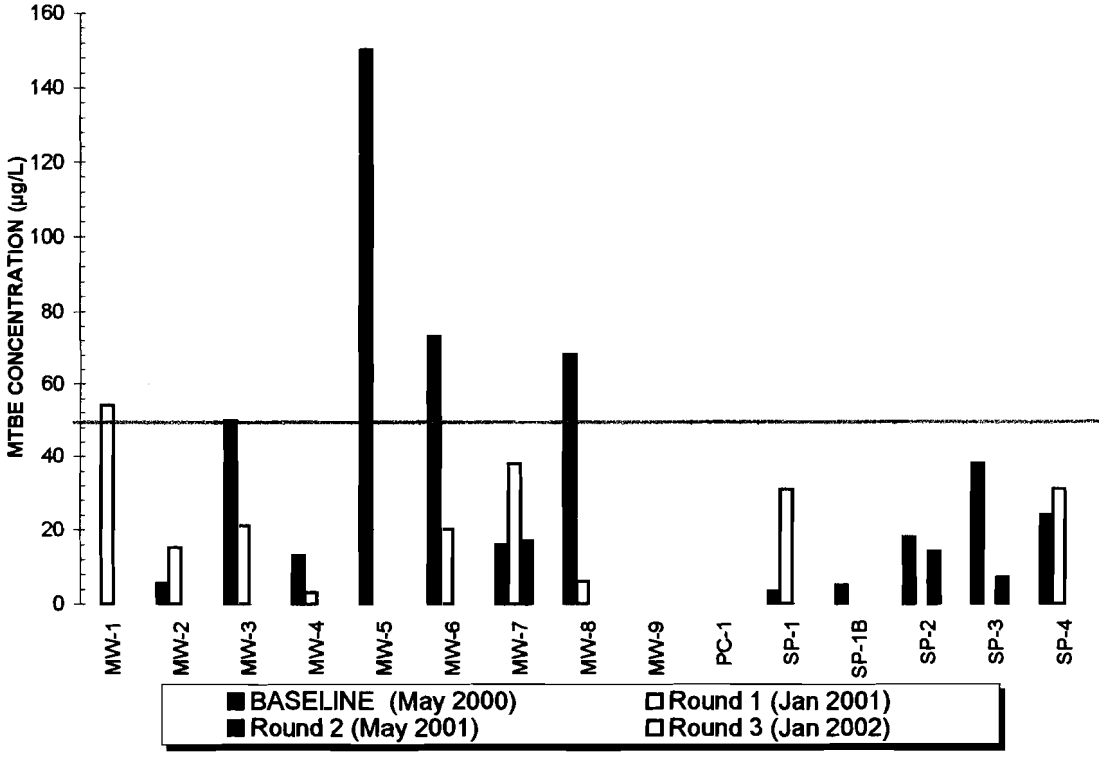
MONITORING WELLS *BTEX µg/L*	BASELINE (May 2000)	Round 1 (Jan 2001)	Round 2 (May 2001)	Round 3 (Jan 2002)	% REMOVAL
MW-1	ND	ND	ND	ND	100%
MW-2	17	4	ND	ND	100%
MW-3	**960**	2	**174**	**156**	84%
MW-4	39	2	2	ND	100%
MW-5	**916**	45	**233**	4	100%
MW-6	**225**	21	6	30	87%
MW-7	18	ND	ND	ND	100%
MW-8	**396**	ND	36	7	98%
MW-9	ND	ND	ND	ND	100%
PC-1	ND	ND	NA	NA	-
SP-1	31	ND	ND	3	90%
SP-1B	5	NA	5	NA	-
SP-2	**217**	NA	ND	58	73%
SP-3	**586**	NA	15	ND	100%
SP-4	75	NA	ND	5	93%
AVERAGE (w/ND's)	**233**	**8**	**33**	**20**	**94%**

MONITORING WELLS *MTBE (µg/L)*	BASELINE (May 2000)	Round 1 (Jan 2001)	Round 2 (May 2001)	Round 3 (Jan 2002)	% REMOVAL
MW-1	ND	**54**	ND	ND	100%
MW-2	6	15	ND	ND	100%
MW-3	50	21	ND	ND	100%
MW-4	13	3	ND	ND	100%
MW-5	**150**	ND	ND	ND	100%
MW-6	**73**	20	ND	ND	100%
MW-7	16	38	17	ND	100%
MW-8	**68**	6	ND	ND	100%
MW-9	ND	ND	ND	ND	100%
PC-1	ND	ND	NA	NA	-
SP-1	3	31	ND	ND	100%
SP-1B	5	NA	ND	NA	-
SP-2	18	NA	14	ND	100%
SP-3	38	NA	7	ND	100%
SP-4	24	31	ND	ND	100%
AVERAGE (w/ND's)	**31**	**18**	**3**	**0**	**100%**

Notes:
1. Bolded values exceed clean up goal of 100 µg/L for BTEX and 50 µg/L for MTBE.
2. Red font denotes active quarter.

FIGURE 1-1
GROUNDWATER MONITORING - THIRD ROUND RESULTS (JAN 2002)
Harrison Subresidency





Target effluent goal (100 µg/L for BTEX and 50 µg/L for MTBE)

1.4.1 Biodegradation Considerations

Bioremediation indicators were also analyzed during the third quarter sampling event. These included carbon dioxide (aqueous), nitrates/nitrites, total organic carbon (TOC), dissolved iron, total iron, sulfate and dissolved oxygen. In general, the indicators used to measure the level of insitu biodegradation are:

- Increase in bacteria population;
- Changes in electron acceptor concentrations, usually depletion of the electron acceptor coupled with a decrease in contaminant concentrations;
- Increases in by-products of biodegradation (carbon dioxide and methane concentrations);

TOC and the surrounding soil formation play important roles in biodegradation. In general, there is a correlation between a decrease in contaminant concentration with an increase in bacteria population, however, it should be noted that because of natural variations on bacteria populations, it is usually difficult to establish a significant trend, especially over short periods of time. We did not conduct any population studies at this site this sampling period.

Electron acceptor concentrations may increase or decrease with contamination reduction. In aerobic remediation, oxygen acts as the terminal electron acceptor; it takes about 3 pounds of available oxygen to convert 1 pound of hydrocarbon to carbon dioxide and water. In anaerobic bioremediation, alternate or substitute electron acceptors are used in place of oxygen. These include, in order of preference, nitrate, manganese, iron oxides, sulfate and carbon dioxide.

In general, the use of a particular electron acceptor is a function of its abundance and the surrounding environment's ORP. Table 1-4 shows the ORP readings for each well as compared to the previous sampling round. The ORP values measured in the field range from –0.05 volts to +0.125 volts. An ORP in the range of about -0.2 to 0.7 represents anaerobic conditions in which alternate electron acceptors like nitrates and carbon dioxide, etc. are used in degradation. The ORP readings are generally outside the published range for carbon dioxide reduction, which is typically about –0.1 to –0.3. Only MW-3 ORP readings approach that range, but that well shows a marked increase in carbon dioxide suggest production due to bioremediation and not consumption.

TABLE 1-4

OXIDATION-REDOX POTENTIAL (ORP)
QUARTER 2 SAMPLING RESULTS
Harrison Subresidency

Location	ORP (volts) 2002	ORP (Volts) 2001	Comments (compared to last period)
MW-1	+0.125	0.10	No appreciable change
MW-2	-0.060	-0.10	No appreciable change
MW-3	-0.095	-0.11	No appreciable change
MW-4	**+0.100**	**0.03**	0.70 increase
MW-5	-0.05	-0.13	-0.08 decrease
MW-6	-0.05	-0.13	-0.08 decrease
MW-7	-0.05	-0.07	No appreciable change
MW-8	-0.05	-0.02	No appreciable change
MW-9	+0.025	0.03	No appreciable change
SP-1	**+0.125**	**-0.09**	+0.134 increase
SP-1B	-	-0.03	
SP-2	-0.025	-0.03	No appreciable change
SP-3	-0.055	-0.05	No appreciable change
SP-4	-0.078	-0.05	No appreciable change
DW-1		-	-

NOTES:

- = Not available

The January 2002 analytical results suggest that site microbes are degrading BTEX. The following observations suggest petroleum-product biodegradation:

- (Nitrification) Nitrate is reduced or depleted in wells near, or immediately adjacent to, the plume, downgradient of the former tank area.
- High levels of CO_2 in the area of highest contamination (MW-3) associated with very low levels of oxygen (2nd lowest value at this well). Perhaps, this could be related to bioremediation processes when the sparge system is operating.
- (Fe-III Reduction) As compared to background (MW-1), high levels of dissolved iron at many of the wells in or near the plume (MW-2, -4, -5, -6, -7, and SP-4) suggest FE-III reduction some areas of the plume.

Subsequent to the startup of this remediation system, it appears that the BTEX (electron donor) mass is being degraded by denitrifying (electron acceptor) anaerobic biological processes. The up-gradient background well (MW-1) has high levels of nitrate, and water down gradient of the former location of the tanks has been depleted of nitrate. Also, the water temperature is generally higher in the area of the plume than in the background.

In contrast, it appears that prior to the startup of the remediation system, sulfate reduction was the process that contributed to most of the BTEX degradation, followed by nitrification and, occasionally, by iron-III reduction. Sulfate concentrations during the January 2002 sampling round appear to be highly variable and, as a result, it seems that SO_4 may be playing less of a role in plume biodegradation, then what was observed in May 2001.

At this site, it is likely that aerobic conditions exist at the filter packs and surrounding formation when the system is running and that anaerobic conditions exist beyond the influence of the air sparge and when the system is not running. A change in the subsurface conditions (i.e. from aerobic conditions to anaerobic conditions) would impact the biomass populations.

DO concentrations were also measured in the field, but may not representative of the aquifer DO concentrations due to the method used in the analysis. During monitoring a cup was filled with the purge water and the sample was likely aerated as a result of the

TABLE 1-5
DISSOLVED OXYGEN CONCENTRATIONS
ROUND 3 SAMPLING RESULTS
Harrison Subresidency

WELL ID.	Dissolved Oxygen Concentration (µg/L)
MW 1	8.3
MW 2	3.6
MW 3	3
MW 4	3.9
MW 5	9
MW 6	3.5
MW 7	3.4
MW 8	4.5
MW 9	12.3
PC 1	NA
SP 1	2.3
SP 1B	NA
SP 2	4
SP 3	5.7
SP 4	4.2

collection technique. Nonetheless, the sample collection was consistent for all samples suggesting that the concentration may be biased high, but the trend in the aquifer remains the same. Table 1-5 highlights the dissolved oxygen concentrations observed during the third period sampling. The data suggest that the dissolved oxygen is depleted in the center of the plume area (MW-3), suggesting increased biological activity in that area; the exception being MW-5 which measured a dissolved concentration of 9.0 mg/L.

In general, the biodegradation data collected herein does suggest increased biodegradation and the data shows that some degradation trends can be observed. Most monitoring wells have second and third period biodegradation data and the following general trends were observed:

- TOC concentrations increased in 3 of 9 monitoring wells;
- Carbon dioxide concentrations decreased in 8 of the 9 monitoring wells;
- Sulfate concentrations were generally higher in 5 of the 9 wells;
- Nitrate concentrations were generally higher in 4 of the 9 wells;
- Total and dissolved iron concentrations were significantly higher in 7 of 9 wells. This is probably related to purging conducted at each well; turbidity readings were higher this period as compared to the last and the wells with very high iron (e.g. MW-2) are noted to have been bailer-dry suggesting sediment from the well bottom may have infiltrated the sampled water.

A marked increase in TOC concentrations was also observed in MW-3. This increase in TOC may be due to an increase in biomass resulting from the available food source (or contamination) present around the well. As the system goes from aerobic to anaerobic conditions, respiration (or expiration) of the microorganisms can be expected. Respiration of the biomass may also explain the slight increase in sulfate concentrations observed in MW-3. MW-3 affords the most opportunity for bioremediation since it is the last location where a food source (BTEX) exists to any appreciable extent. As the remediation progresses, the amount of available substrate decreases which may result in a decrease in biodegradation. However, the amount of contamination at the outset of this project (say, 1 mg/L in the center of the plume) was not a significant amount of the substrate to begin with, so a significant decline in biodegradation is not expected when the system is restarted.

1.5 DISCUSSION

Concentrations of volatile organic contaminants in groundwater can increase (or rebound) after air sparge system operation has ceased. For this reason, it is important to allow sufficient time to elapse between air sparge system shutdown and confirmation sampling using conventional groundwater monitoring wells. A waiting period of 4 to 48 weeks may be necessary before representative confirmatory samples can be collected. In order to determine the appropriate waiting period for this site, the interval prior to groundwater sample collection has been increased with each consecutive sampling round. The first-round samples were collected the day after the air sparge system was shutdown; the second-round samples were collected 4 weeks after shutdown of the air sparge system; and the third-round samples were collected after an 11 week interval.

The baseline sampling (May 2000, prior to startup of the AS/SVE system) revealed that 6 wells exceeded the BTEX effluent goal of 100 µg/L, and 1 wells exceeded the MTBE effluent goal of 100 µg/L. The first round results, from January 2001, generally showed significant reductions in BTEX and MTBE, with all samples meeting the target effluent criteria. It is likely that the first round results are biased low, due to the relatively short interval before sampling, in January 2001. A short pre-sampling interval was applied in January 2001 to create a benchmark, against which to analyze the effects of rebounding in subsequent rounds.

The second-round results indicated that rebounding was a factor at two wells where samples exceeded the target effluent goals for BTEX. In both of these cases, the total BTEX concentration reported in May 2001 was significantly lower than in May 2000. MTBE, where detected, was well below the 50 µg/L effluent goal for all samples collected during the second round.

The third-round results indicate that concentrations continue to decrease and remain below the target effluent goals across the site. Only wells MW-3 and possibly SP-2 exhibited any significant evidence of rebounding in the third round, with reported BTEX concentrations of 156 µg/L and 58 µg/L, respectively. Of these wells, only at MW-3 did concentrations exceed the target effluent goal of 100 µg/L for BTEX. During the first round (when only a brief interval was allowed between shutdown and groundwater sampling) well MW-3 exhibited a BTEX concentration of 2 µg/L; well SP-2 was not sampled during the first round. Third round concentrations at both of these locations

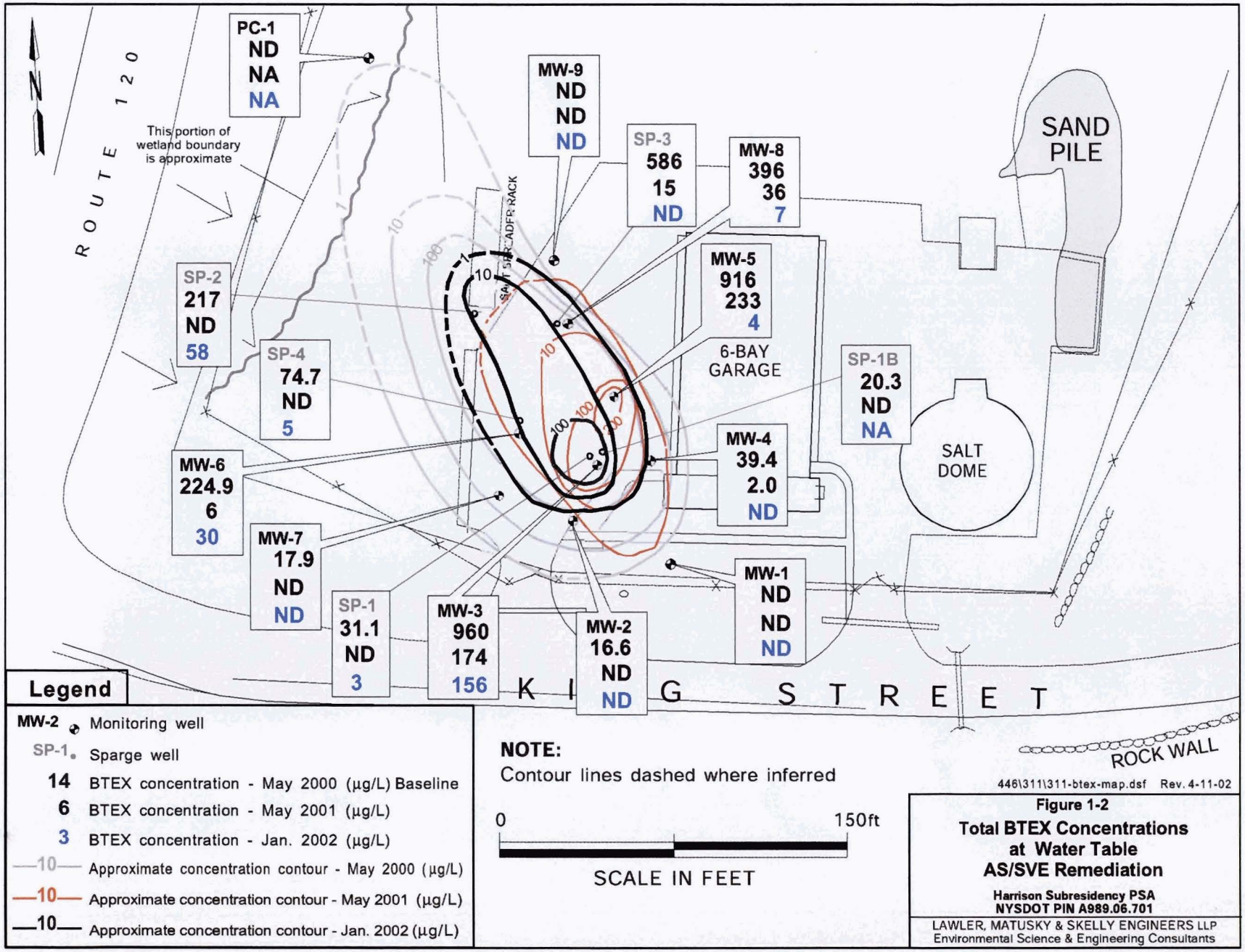
were greatly reduced from what they had been during the baseline sampling. The second round concentrations at these wells were 174 µg/L and "ND", respectively. Third round sampling reveals that virtually all sampled monitoring wells show an 85% - 100% reduction in BTEX concentrations, with an overall average reduction of 94%. MTBE was not detected in any wells during the third round. Figure 1-5 depicts the overall decreasing trend in BTEX concentrations over time in the most significant wells.

MTBE was analyzed using a mass spectrometry method during the second round and third round sampling events. This reinforces the premise that the previous MTBE data analyzed using gas chromatograph methods may be unreliable.

Figure 1-2 (BTEX plume) shows the contamination plume developed from the baseline data; the second and third round results are overlaid onto the plume maps. An isopeth map for MTBE was not prepared since MTBE was not detected at any monitoring points. Figures 1-3 and 1-4 show the BTEX/MTBE plume from spring 1997 and May 2001, respectively. The figures were generated using GIS technology and show the significant reduction of concentrations in the plume.

Naphthalene and 2-methylnapthalene were known to be present at this site, therefore, the sampling program was expanded during the second round of sampling to include these parameters. Semi-volatile analyses of naphthalene and 2-methylnapthalene during the second round indicated that the concentrations of each were non-detectable in all sampling locations, except for well MW-5, where a concentration of 10 µg/L was reported for 2-methylnapthalene (well below the target criteria of 50 µg/L). The target effluent goal for Naphthalene is 25 µg/L. The next groundwater sampling event will include a final round of semi-volatile analyses via Method 8270 for these parameters.

During rounds two and three, naphthalene was also included in the volatiles analyses, and the results are presented in Attachment A. A target effluent criteria is not presented for naphthalene as a volatile compound because it is widely accepted that, due to the fact that naphthalene occurs at the tail-end of the volatiles scan, reported concentrations of naphthalene as a volatile organic compound are suspect.



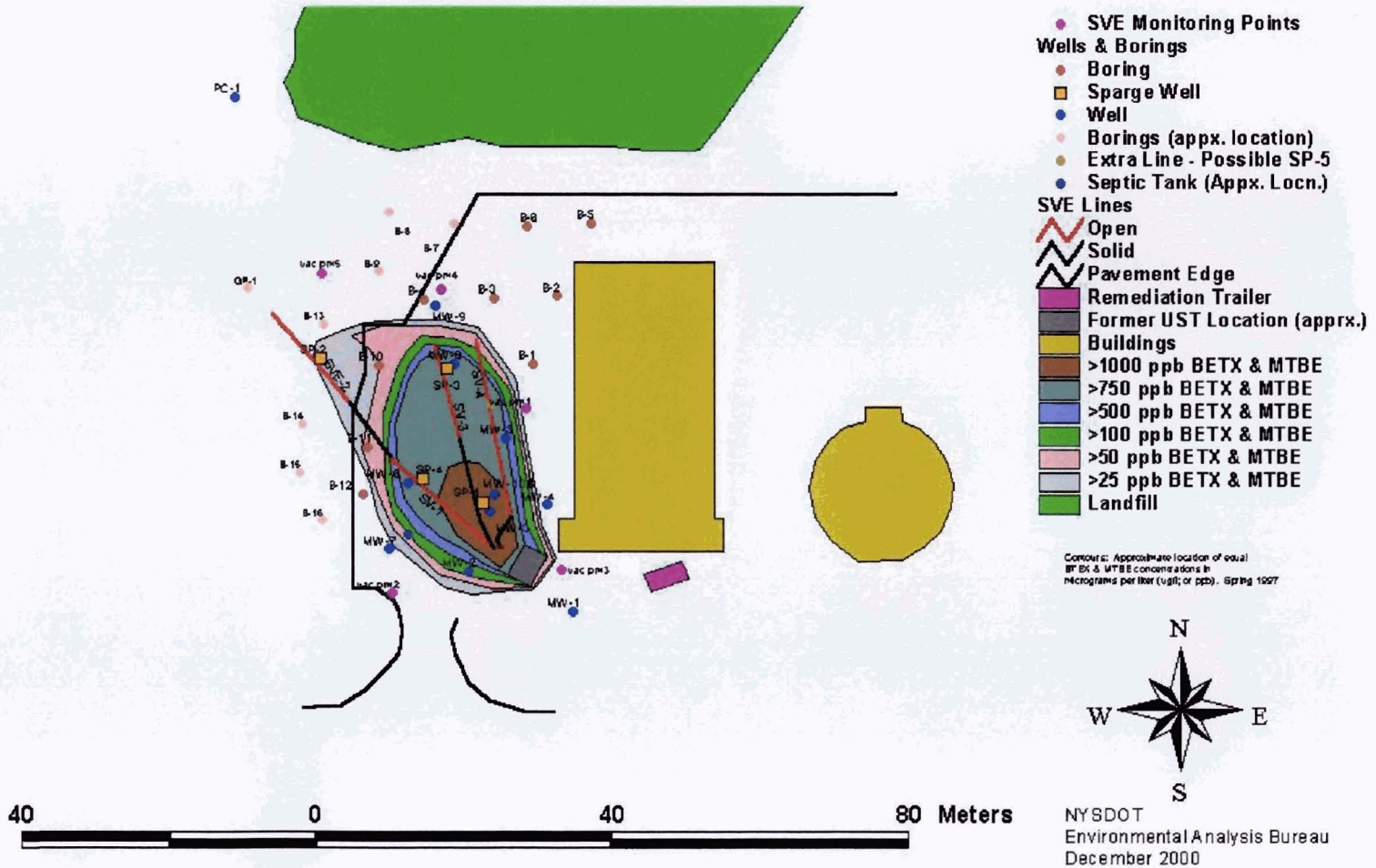
446\311\311-btex-map.dsf Rev. 4-11-02

Figure 1-2

Total BTEX Concentrations at Water Table AS/SVE Remediation

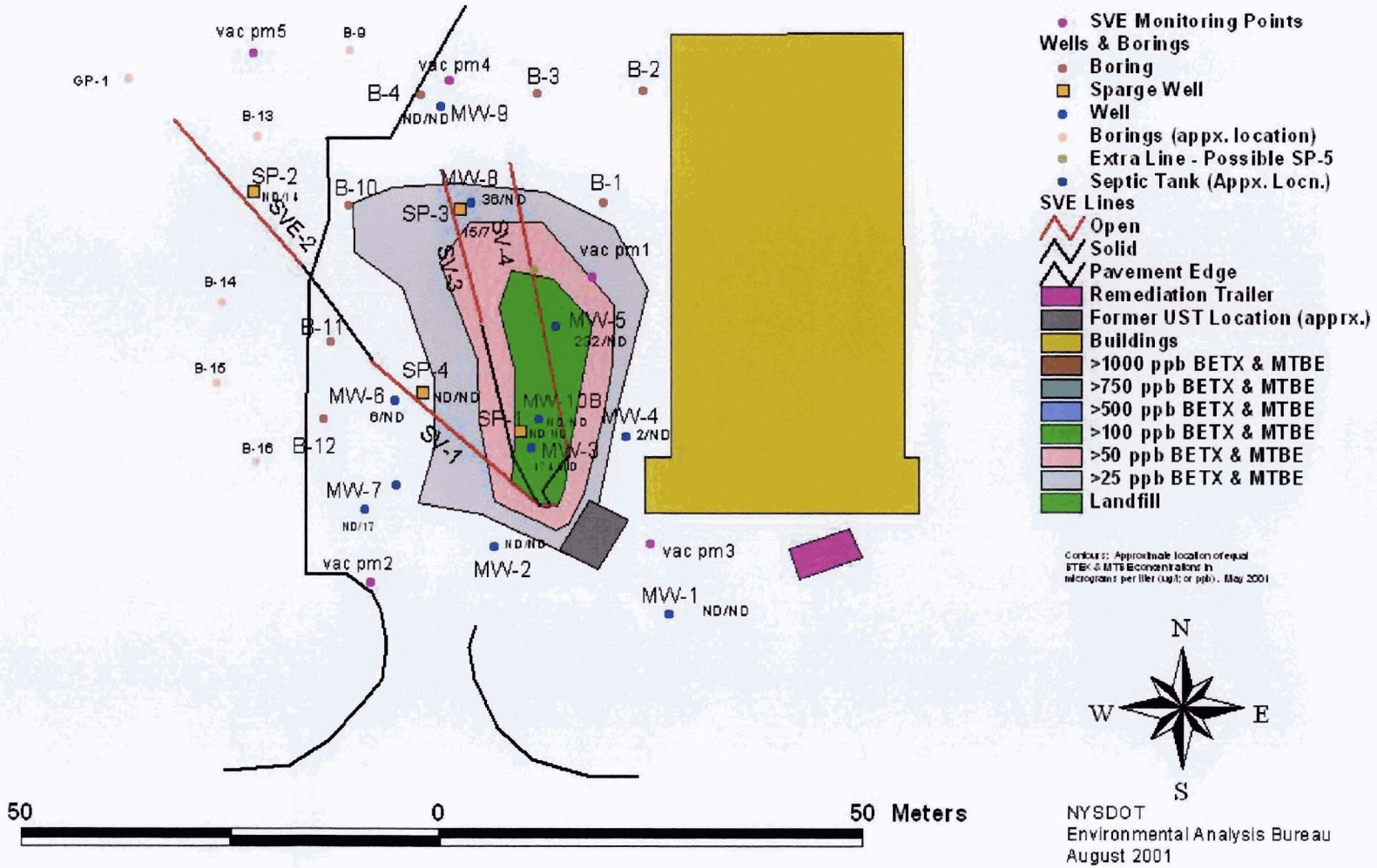
Harrison Subresidency PSA
NYSDOT PIN A989.06.701

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Environmental Science & Engineering Consultants



\446173\graphics\446-173 Fig 1-3.dsf April 11, 2002

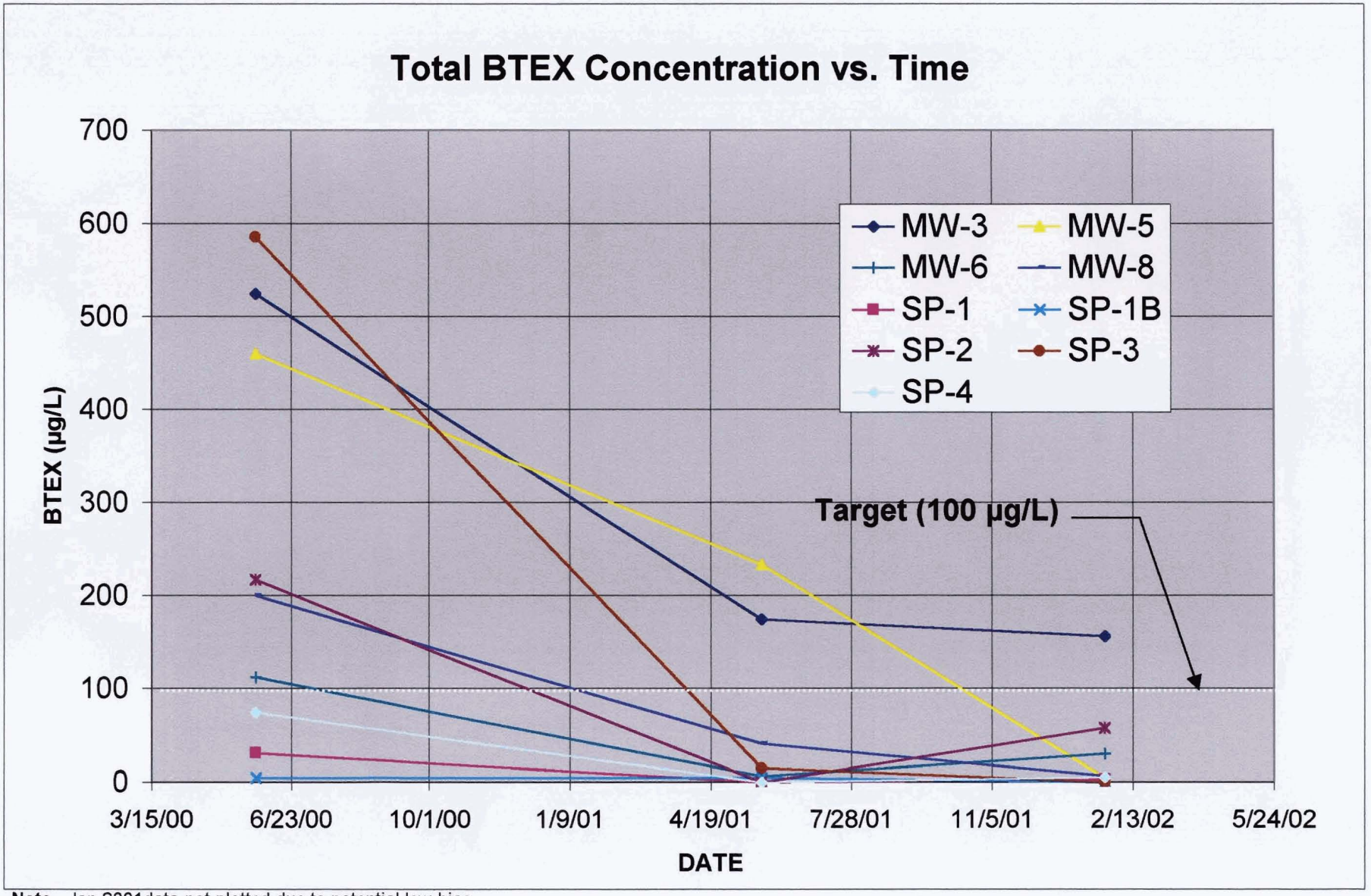
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Petroleum (BTEX & MTBE) Contaminant Plume at the Water Table (Spring 1997)** **Wells, Borings, and Soil Vapor Extraction Lines** **Harrison Subresidency, Westchester County**	**Figure 1-3**



\446173\graphics\446-173 Fig 1-4.dsf April 11, 2002

LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Petroleum (BTEX & MTBE) Contaminant Plume at the Water Table (May 2001)** **Wells, Borings, and Soil Vapor Extraction Lines** **Harrison Subresidency, Westchester County**	**Figure 1-4**

Figure 1-5
DECAY OF BTEX CONCENTRATION IN GROUNDWATER
Harrison Subresidency



Note - Jan 2001data not plotted due to potential low-bias.

1.6 FINDINGS AND CONCLUSIONS

- The results demonstrate effective remediation throughout the plume area with no evidence of any off site migration, although some rebounding did take place at wells SP-2 and MW-3. On average, there has been a 100% reduction in MTBE concentrations and a 94% reduction in BTEX concentrations across the site.

- As demonstrated in Figure 1-6 (BTEX Hydrographs for selected wells), there does not appear to be a correlation between water table elevation and contaminant concentration. This is further indication that remedial efforts have been successful and that the decreases in contaminant concentrations are not a result of fluctuations in the water table.

- There were some changes in static water table elevation between the baseline sampling event and the three rounds of groundwater sampling. In general, the static water table was approximately 18 inches to 26 inches lower in January 2002 when compared to May 2000. The depth to water measurements associated with SP-1, SP-2, SP-4 in May 2000 appear to be artificially low, probably due to poor recharge in these wells. Sparge wells have been included in the sampling program to provide a more detailed qualitative picture of groundwater concentrations across the site. Due to the differences in their construction, however, analytical groundwater data from sparge wells may not be quantitatively representative of actual concentrations. Table 1-2 shows the static water elevation data. Figure 1-6 depicts BTEX hydrographs for selected wells; the baseline (May 2000) groundwater elevation at sparge well SP-2 is anomalous when compared to other wells. Water table elevation during system operation has not been assessed.

- Denitrifying anaerobic biological processes appear to be degrading the BTEX during remediation. Prior to remediation, sulfate reduction was the process that contributed to most of the BTEX degradation.

- Water temperature is generally higher in the area of the plume than in the background area.

FIGURE 1-6
(Page 1 of 4)
Harrison Subresidency

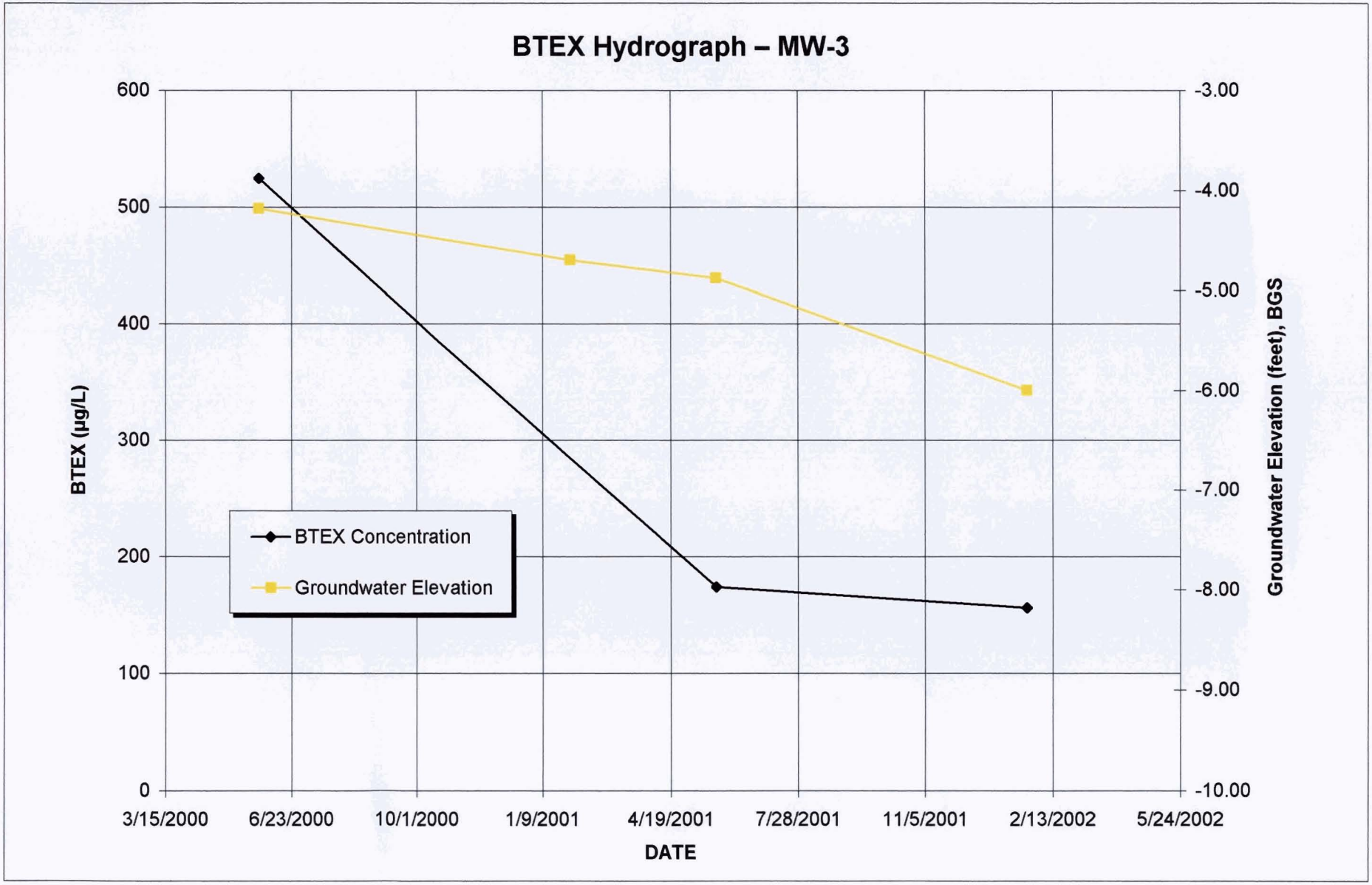


FIGURE 1-6
(Page 2 of 4)
Harrison Subresidency

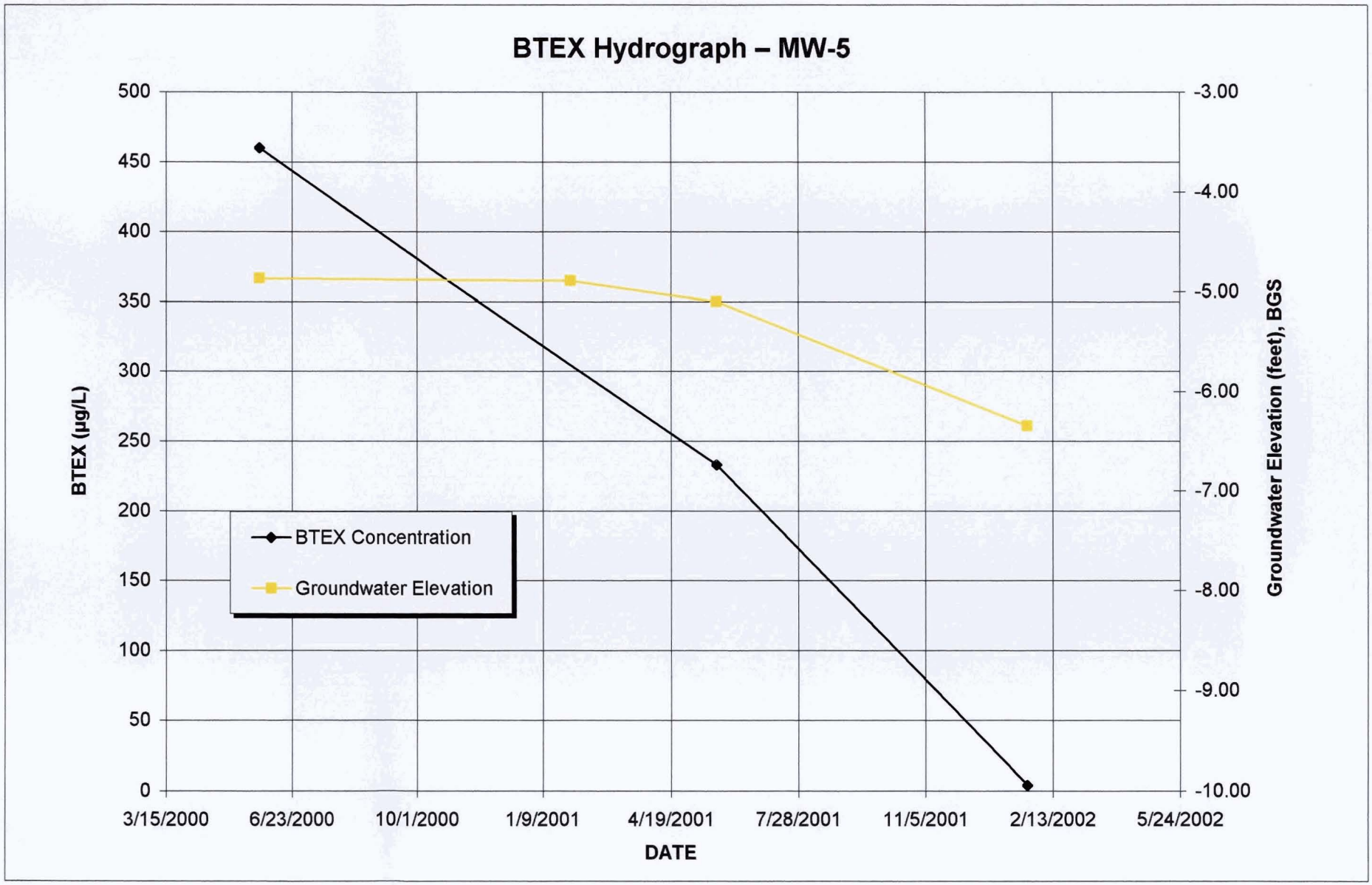


FIGURE 1-6
(Page 3 of 4)
Harrison Subresidency

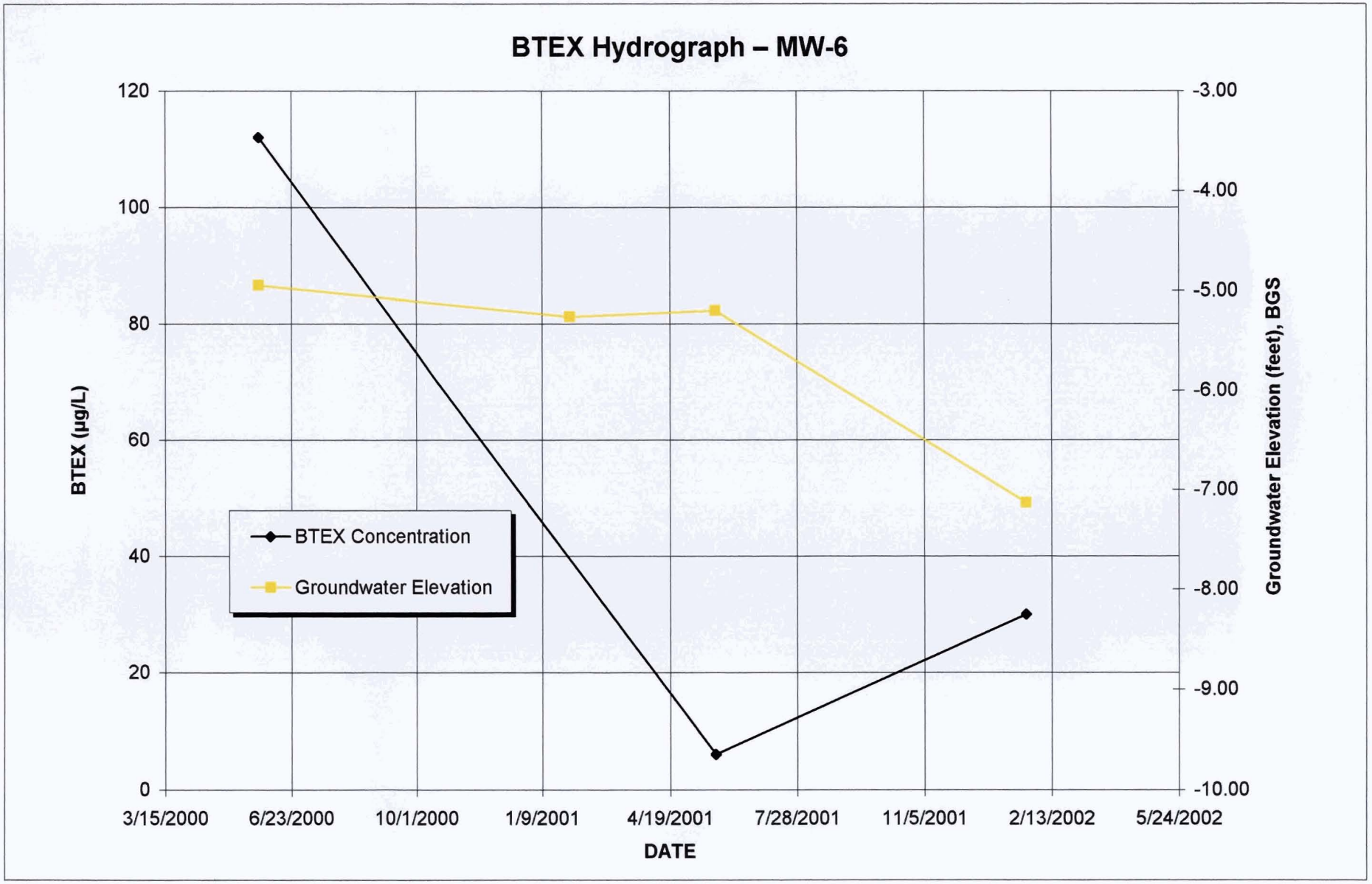
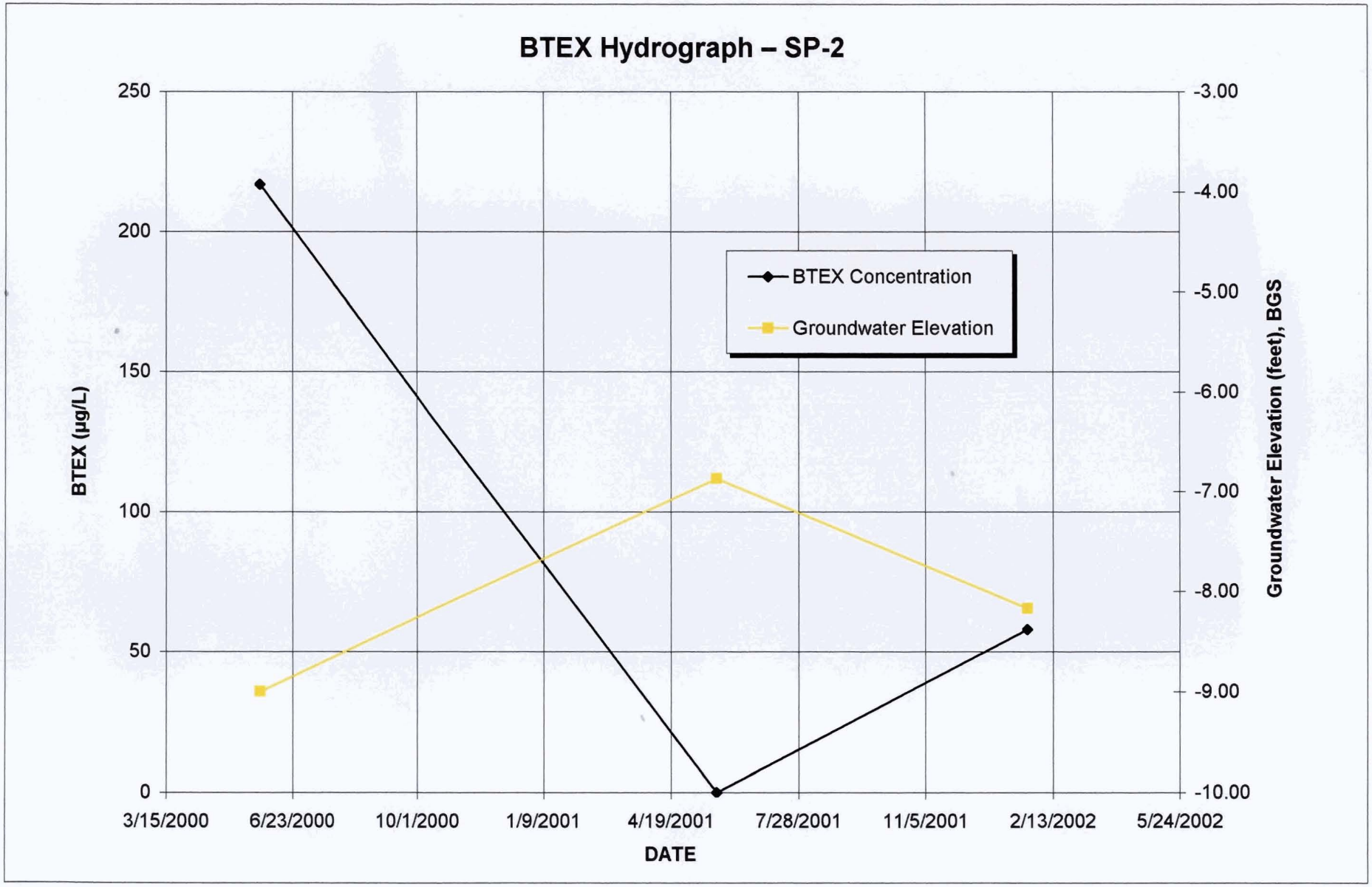


FIGURE 1-6
(Page 4 of 4)
Harrison Subresidency



1.7 RECOMMENDATIONS

- Continued operation of the AS/SVE system is warranted until the beginning of August 2002. Thereafter, the air sparge should remain off-line until at least late October 2002 (11 weeks minimum), when the fourth round of sampling is scheduled to be performed. The AS/SVE system should then continue to remain off-line until after the fourth round results have been analyzed. If these results are as promising as the second and third round results, then the system should remain off, and a schedule for post-remedial groundwater monitoring toward site closure would be proposed at that time.

- As discussed above, a final analysis via Method 8270 should be conducted for naphthalene and 2-methylnapthalene. If the results indicate that they are not present above the target criteria, then we will advise that NYSDOT petition to remove them from consideration as contaminants of concern at this site.

- The air sparge system is programmed to pulse the airflow into the sparge points at SP-1 and SP-2. The programming during the reporting period pulsed the wells daily with 16 hours of air flow on and 8 hours off. Sparge point SP-3 must remain programmed to run continuously due to problems with the construction of the well. Sparge point SP-4 is not operational. The system should continue to operate with these settings. Due to the reduced concentrations of contaminants now present in the groundwater, an attempt should be made to increase the flow rates at SP-1 and SP-2.

- No additional sparging wells are recommended at this time.

- Overall indications seem to suggest that some level of biodegradation is taking place; data collection during system operation may be useful in assessing aerobic conditions.

CHAPTER 2

OPERATION AND MAINTENANCE REPORT

2.1 MONTHLY INSPECTION

The monthly inspection checklist is shown in Table 2-1. The air sparge/SVE system was shut down from November 9, 2000 to January 29, 2002 due to performance groundwater sampling. The air sparge remained down until February 18, due to mechanical failure.

2.2 SYSTEM OPERATION

Table 2-2 tabulates the cumulative system run time over the past year and runtime since project inception, in November 2000 is displayed graphically. Figure 2-1 presents the operating calendar. Figure 2-2 provides the AS/SVE equipment specification, and depicts the equipment layout. The current sparge timer pulse settings are presented in Figure 2-3.

2.3 OPERATION REPORT

The monthly operation report is presented in Table 2-3. Figure 2-4 shows the SVE exhaust concentration over time.

Lawler, Matusky & Skelly Engineers LLP
Environmental Science & Engineering Consultants

TABLE 2-1
INSPECTION REPORT SHEET
Harrison Subresidency

Date:	1/18/02 GG		1/29/02 GG			
Weather:	30F Clear		65F sunny, clear			
SVE hours /time	7999.1 @ 1525		7999.1 @1010			
AS hours/time	5210.1 @ 1525		5210.1 @ 1010			
Air Sparging Flow Rate (CFM)	VS		VS		VS	
SP-1		Not Operating		Not Operating		
SP-3						
SP-4						
SP-2						
Air Sparging Pressure (PSI)						
SP-1						
SP-3						
SP-4						
SP-2						
Air Sparging Blower Outlet						
SVE Velocity (ft/min)	x					
VE-1	not read		not read			
VE-2	not read		not read			
VE-3	not read		not read			
VE-4	not read		not read			
SVE Vacuum (In W.C.)	VS		VS		VS	
VE-1	100	17.5	100	18		
VE-2	100	15	100	15		
VE-3	100	11.5	100	11.5		
VE-4	100	13	100	13.5		
SVE Blower Inlet		42		42		
Vacuum at SVE Knockout Pot		23.5		23		
Pressure Monitoring Points (in W.C.)						
PM-1	not read		not read (startup)			
PM-2	not read		not read (startup)			
PM-3	not read		not read (startup)			
PM-4	not read		not read (startup)			
PM-5	not read		not read (startup)			
Air Sparging Temperature (°C)	not operating		not operating			
SVE Exhaust Temperature (°C)	35		36			
SVE Exhaust PID Reading	Not Read		0			
Knockout Pot Water Level (in.)	0		0			
Date of Last AS Filter Change	2/13/2001		2/13/2001			
Date of Last SVE Filter Change	11/2/2001		11/2/2001			

VS = Valve Setting, % open (e.g., 0, 25, 50, 75, 100)

GG = George Gattullo; RD = Rob Degiorgio

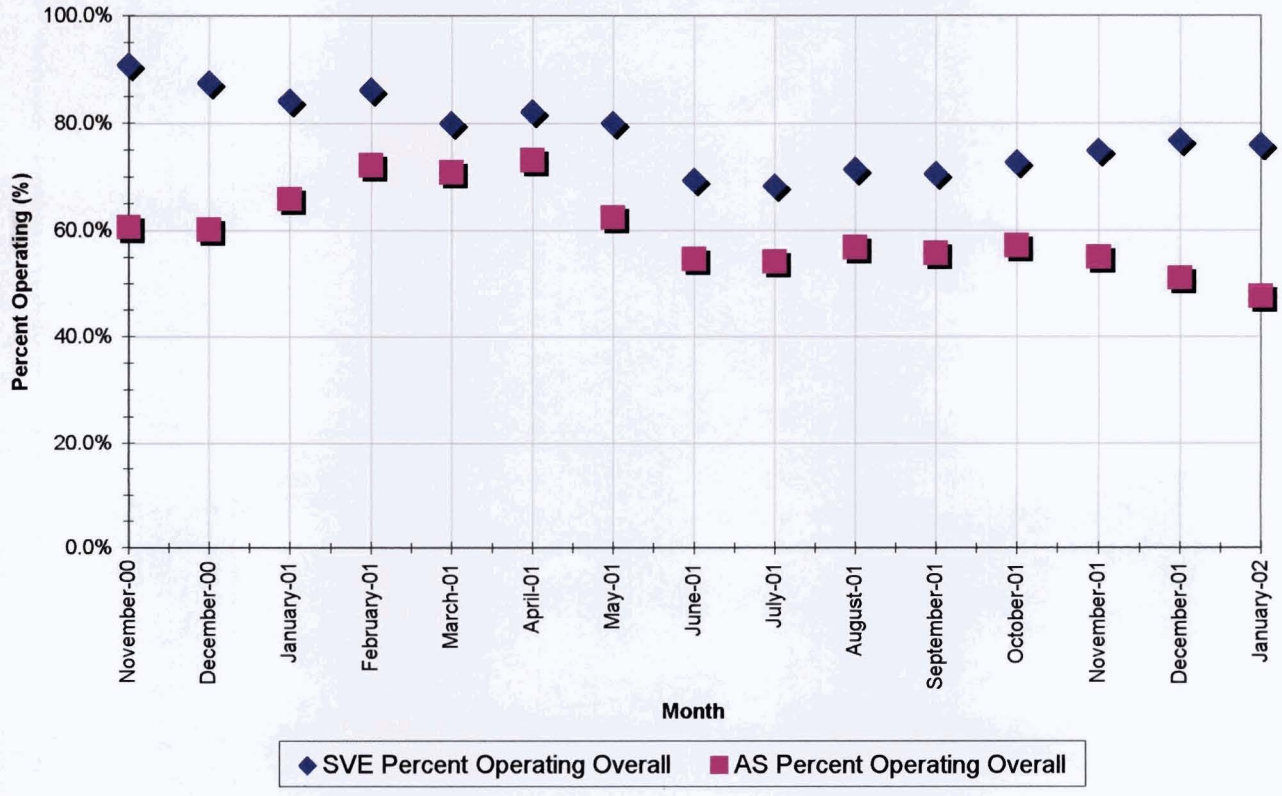
Anemoter: Dwyer 471
PID: H-Nu P101, LMS#001

Comments:
1/29: System start up--AS not operational.

TABLE 2-2

CUMULATIVE SYSTEM RUNTIME
Harrison Subresidency

Month	SVE Cumulative Hours Running (approx.)	AS Cumulative Hours Running (approx.)	Cumulative Hours Available	OVERALL		MONTH	
				SVE Percent Operating Overall	AS Percent Operating Overall	SVE Percent Operating - Month	AS Percent Operating - Month
January-01	1,858	1,454	2,208	84.1%	65.8%	77.6%	77.2%
February-01	2,122 (a)	2,076	2,880	86.1% (b)	72.1%	92.6% (b)	92.6%
March-01	2,613	2,567	3,624	80.0%	70.8%	66.0%	66.0%
April-01	3,273	3,173	4,344	82.1%	73.0%	91.6%	84.1%
May-01	3,781	3,173	5,088	79.9%	62.4%	68.3%	0.0%
June-01	3,781	3,173	5,808	69.4%	54.6%	0.0%	0.0%
July-01	4,229	3,548	6,552	68.3%	54.2%	60.2%	50.5%
August-01	4,950	4,143	7,296	71.3%	56.8%	96.9%	79.9%
September-01	5,407	4,460	8,016	70.6%	55.6%	63.5%	44.1%
October-01	6,104	5,003	8,760	72.7%	57.1%	93.7%	73.0%
November-01	6,824	5,210	9,480	74.8%	55.0%	100.0%	28.8%
December-01	7,568	5,210	10,224	76.7%	51.0%	100.0%	0.0%
January-02	8,061	5,210	10,968	76.0%	47.5%	66.3%	0.0%



Notes:

(a) Due to a malfunction in the SVE elapsed timer in February, this value is not representative of the actual hours of operation.

(b) This value is calculated using an estimated value for SVE elapsed time..

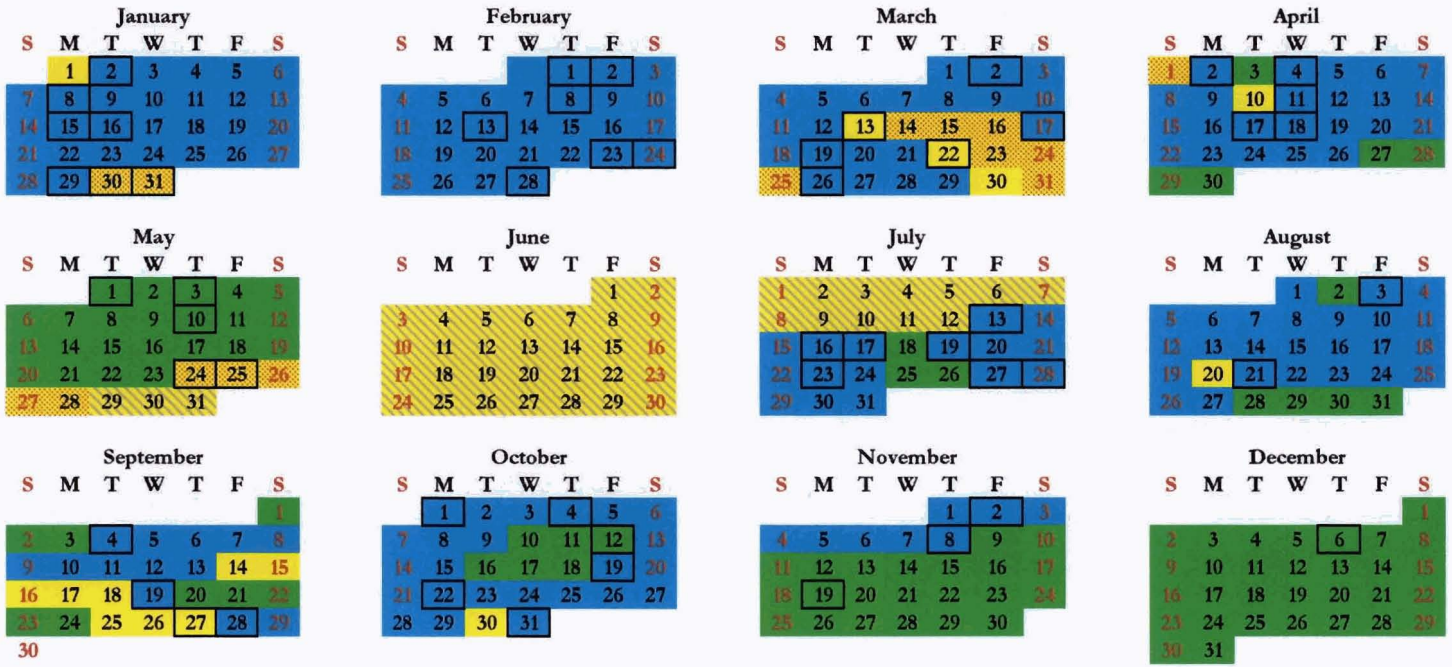
FIGURE 2-1 OPERATING CALENDAR

(Page 1 of 2)

Harrison Subresidency

YEAR 2000

YEAR 2001



Legend

- Up time
- Unplanned downtime
- Unplanned downtime, warranty issues
- Planned downtime; quarterly sampling or maintenance
- Planned or Unplanned AS system down time; SVE running
- Site Visits

FIGURE 2-1 OPERATING CALENDAR

(Page 2 of 2)

Harrison Subresidency

YEAR 2002

January

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

March

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

May

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	25	28	29	30	31	

June

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

July

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

August

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

September

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

October

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

November

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Legend

- Up time
- Unplanned downtime
- Unplanned downtime, warranty issues
- Planned downtime; quarterly sampling or maintenance
- Planned or Unplanned AS system down time; SVE running
- Site Visits

TABLE 2-3
MONTHLY OPERATION AND MAINTENANCE REPORT

NYSDOT – HARRISON SUBRESIDENCY D012589 TOWN OF HARRISON – WESTCHESTER, NY PIN 8007.31.101	MONTH: January 2002

1/18/02 – LMS was on site to shutdown the SVE system in preparation for groundwater sampling. Shutdown system without incident.

1/23/02 – LMS was on site to perform groundwater sampling. Wells MW-1 through MW-9 sampled.

1/24/02 – LMS was on site to perform groundwater sampling. Wells SP-1 through SP-4 sampled.

1/29/02 – LMS was on site to restart the system. Restarted SVE, but was unable to restart AS—blower may be seized. Tightened bolts on well covers where bolts are present. Removed stuck cap on well MW-10B.

(Note: problem was later determined to be an electrical short in the air sparge blower. The AS system was restarted on 2/18/02.)

MAINTENANCE THIS MONTH:
Attempted diagnosis and re-start of AS system.

SPARE PARTS USED:
None used

SPARE PARTS ORDERED:
None.

SITE PHONE NUMBER: (914) 428-8130

TYPICAL OPERATING PARAMETERS:

Air Sparging (Total Flow = 0 CFM)

	Pressure	Flow
	(psi)	(scfm)
SP 1	Not operating	Not operating
SP 2	Not operating	Not operating
SP 3	Not operating	Not operating

Vapor Extraction (Total Flow = 218 CFM)

	Vacuum	
	(in.-H_2O)	
VE 1	17.5	
VE 2	15	
VE 3	11.5	
VE 4	13	

OUTSTANDING ISSUES AND ACTIONS:

- The air sparge system was inoperable at the end of this reporting month. The blower was subsequently repaired and restarted in February, 2002.

- Was quarterly well sampling conducted? Yes X _ No
  If yes, date: Jan 23 & 24, 2002

Lawler, Matusky & Skelly Engineers LLP

FIGURE 2-2
AS/SVE EQUIPMENT SPECIFICATIONS AND LAYOUT
Harrison Subresidency

NYSDOT HARRISON SUBRESIDENCY

D008873 CPIN 8007.31.301

AIR SPARGING AND SOIL VAPOR EXTRACTION SYSTEM SPECIFICATIONS

TRAILER (Class 1 , Div. 2)

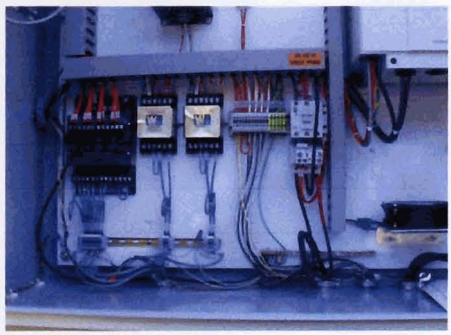
Haulmark	Grizzly
Model	#G816B2
OVERALL	
Length	19'17"
Width	100"
Height	103"
INTERIOR	
Length	16'4"
Width	96"
Height	78"
Platform Height	19"
Tire Size	ST205/R15 15"
Payload Cap.	4280 (avg.)
Double Rear doors	
Side door	
Color	white

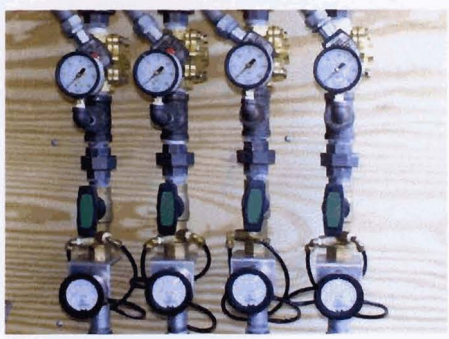
AIR SPARGING SYSTEM

Blower	Becker KDT
Model #	3.140
HP	12
Voltage	230 V/3 phase
Converter	VFD
Max. pressure	22 psig
Max. flow	90 scfm
Max. temp.	125 F
Noise level	84 max. dBA
Outlet size	1 ½ " bsp

SOIL VAPOR EXTRACTION

Blower	Gast
Model #	R6P155Q-50
HP	5.5
Voltage	230 V/1 phase
Max. vacuum	85" w.c.
Max. flow	280 scfm
Max. temp.	100 F
Noise level	81 max. dBA
Moisture sep.	60 gal.



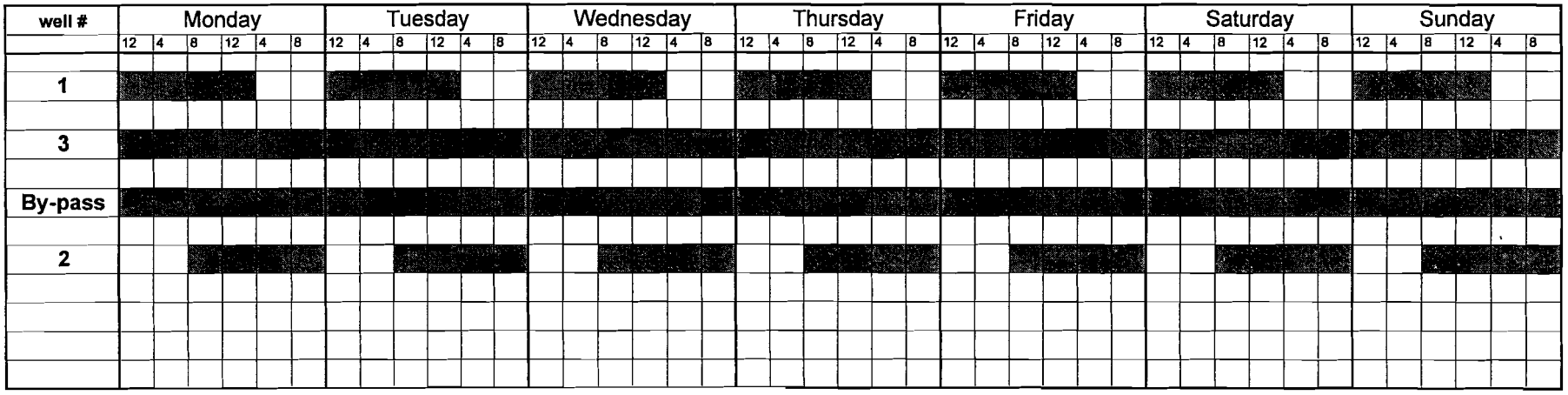


LMS

FIGURE 2-3

AIR SPARGE WELL PULSING TIMER SETTING

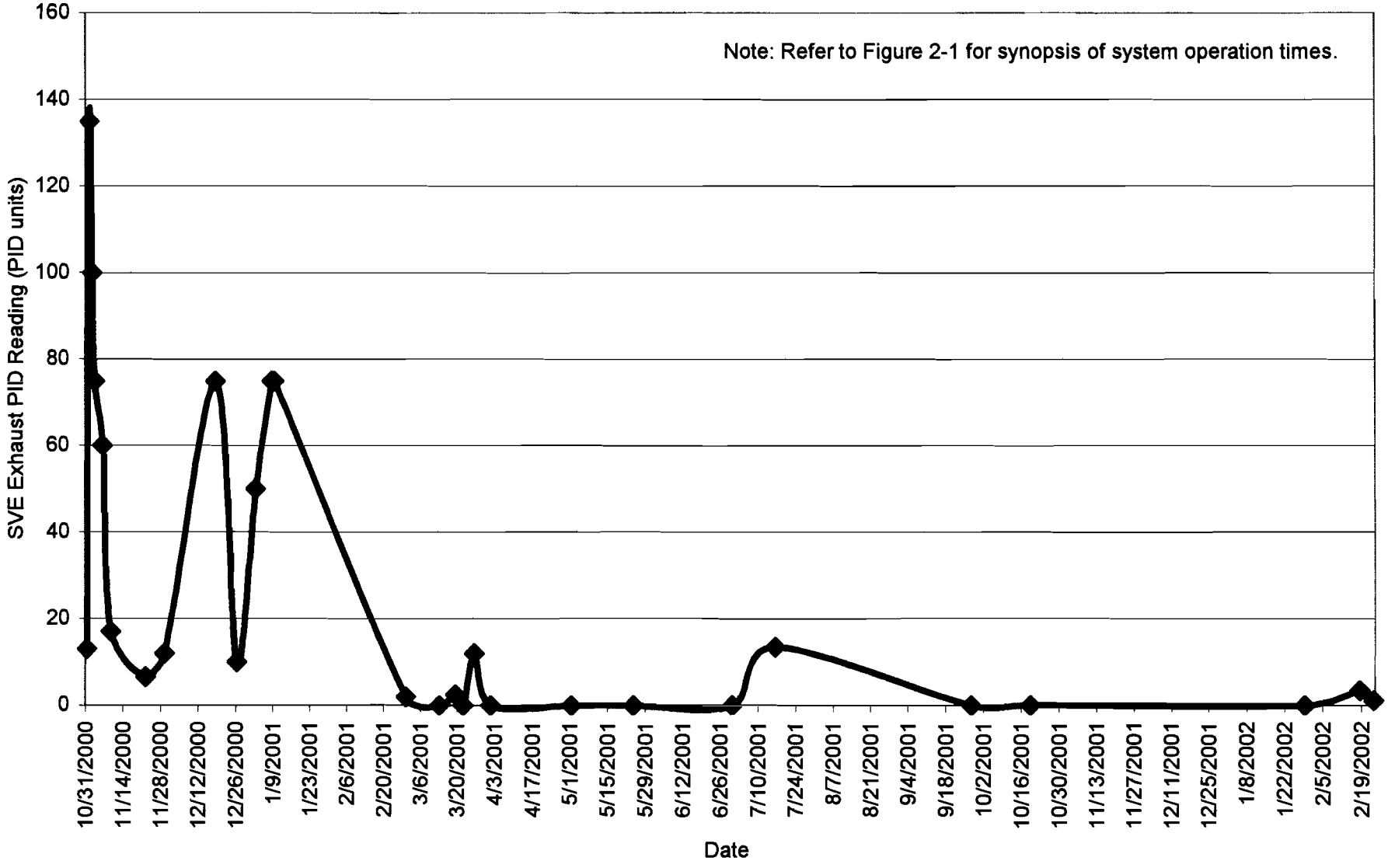
NYSDOT Harrison Subresidency



LEGEND:

= sparge air on

FIGURE 2-4
SVE EXHAUST PID READINGS
Harrison Subresidency



ATTACHMENT A

MONITORING WELL DATA SUMMARY

MONITORING WELL DATA SUMMARY
MAY 2000 (BASELINE DATA)
Harrison Subresidency

WELL ID: MW 1	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2 (May 2001)	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	ND	54	ND			50
Benzene	ND	ND	ND			1
Toluene	ND	ND	ND			1
Ethylbenzene	ND	ND	ND			1
m,p-Xylene	ND	ND	-			1
O-Xylene	ND	ND	-			1
Xylenes (total)	ND	ND	ND			1
TOTAL BTEX	**ND**	**ND**	**ND**			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			ND			50
Napthalene			ND			25
Metals (ug/L)						
Chloride	7,000	♦	♦			250,000
Sodium	27,000	♦	♦			20,000
Iron (total)	ND	♦	207			300
Iron (dissolved)	ND	♦	ND			300
Lead	ND	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	4,100	♦	11,000			10,000
Sulfate	15,000	♦	13,000			250,000
TOC	4,000	♦	9,000			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	97,400	♦	59,000			N/A
Dissolved Oxygen	3.6	1.97	6.42			N/A

WELL ID: MW 2	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	5.5	15	ND			50
Benzene	2.1	ND	ND			1
Toluene	8.0	2	ND			1
Ethylbenzene	2.7	ND	ND			1
m,p-Xylene	ND	-	-			1
O-Xylene	3.8	-	-			1
Xylenes (total)	3.8	2	ND			1
TOTAL BTEX	16.6	4	**ND**			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			ND			50
Napthalene			ND			25
Metals (ug/L)						
Chloride	10,000	♦	♦			250,000
Sodium	22,000	♦	♦			20,000
Iron (total)	♦	♦	6330			300
Iron (dissolved)	♦	♦	646			300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	ND			10,000
Sulfate	♦	♦	14,000			250,000
TOC	♦	♦	17,000			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	49,000			N/A
Dissolved Oxygen	2.6	3.08	4.23			N/A

MONITORING WELL DATA SUMMARY
MAY 2000 (BASELINE DATA)
Harrison Subresidency

WELL ID: MW 3	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	50	21	ND			50
Benzene	64	ND	2			1
Toluene	21	ND	2			1
Ethylbenzene	350	ND	ND			1
m,p-Xylene	460	-	-			1
O-Xylene	65	-	-			1
Xylenes (total)	525	2	170			1
TOTAL BTEX	960.0	2.0	174			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			ND			50
Napthalene	160		4 J			25
Metals (ug/L)						
Chloride	24,000	♦	♦			250,000
Sodium	43,000	♦	♦			20,000
Iron (total)	18,000	♦	8880			300
Iron (dissolved)	ND	♦	2410			300
Lead	8	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	ND	♦	ND			10,000
Sulfate	ND	♦	18,000			250,000
TOC	10,000	♦	27,000			N/A
Petroleum Hydrocarbon	9,200	♦	♦			N/A
Carbon Dioxide	105,000	♦	48,000			N/A
Dissolved Oxygen	2.1	2.93	1.89			N/A

WELL ID: MW 4	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	13	3	ND			50
Benzene	4.4	ND	ND			1
Toluene	ND	ND	ND			1
Ethylbenzene	22	2	2			1
m,p-Xylene	♦	♦	-			1
O-Xylene	♦	♦	-			1
Xylenes (total)	13	ND	1			1
TOTAL BTEX	39.4	2.0	2			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			ND			50
Napthalene			ND			25
Metals (ug/L)						
Chloride	8,000	♦	♦			250,000
Sodium	22,000	♦	♦			20,000
Iron (total)	♦	♦	1360			300
Iron (dissolved)	♦	♦	1010			300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	ND			10,000
Sulfate	♦	♦	15,000			250,000
TOC	♦	♦	14,000			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	55,000			N/A
Dissolved Oxygen	3.5	2.35	4.29			N/A

MONITORING WELL DATA SUMMARY
MAY 2000 (BASELINE DATA)
Harrison Subresidency

WELL ID: MW 5	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	150	ND	ND			50
Benzene	14	ND	1			1
Toluene	32	2	2			1
Ethylbenzene	410	ND	ND			1
m,p-Xylene	♦	♦	-			1
O-Xylene	♦	♦	-			1
Xylenes (total)	460	43	230			1
TOTAL BTEX	**916.0**	**45.0**	**233**			**100**
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			10			50
Napthalene			ND			25
Metals (ug/L)						
Chloride	60,000	♦	♦			250,000
Sodium	**32,000**	♦	♦			20,000
Iron (total)	♦	♦	9630			300
Iron (dissolved)	♦	♦	2930			300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	ND			10,000
Sulfate	♦	♦	17,000			250,000
TOC	♦	♦	23,000			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	68,000			N/A
Dissolved Oxygen	3.4	3.09	6.12			N/A

WELL ID: MW 6	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	73	20	ND			50
Benzene	7.9	ND	ND			1
Toluene	7	ND	ND			1
Ethylbenzene	98	ND	ND			1
m,p-Xylene	♦	♦	-			1
O-Xylene	♦	♦	-			1
Xylenes (total)	112	21	6			1
TOTAL BTEX	**224.9**	**21**	**6**			**100**
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			ND			50
Napthalene			ND			25
Metals (ug/L)						
Chloride	40,000	♦	♦			250,000
Sodium	**33,000**	♦	♦			20,000
Iron (total)	♦	♦	1720			300
Iron (dissolved)	♦	♦	475			300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	ND			10,000
Sulfate	♦	♦	17,000			250,000
TOC	♦	♦	17,000			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	60,000			N/A
Dissolved Oxygen	3.1	6.05	4.1			N/A

MONITORING WELL DATA SUMMARY
MAY 2000 (BASELINE DATA)
Harrison Subresidency

WELL ID: MW 7	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	16	38	17			50
Benzene	3.4	ND	ND			1
Toluene	4	ND	ND			1
Ethylbenzene	5.7	ND	ND			1
m,p-Xylene	♦	♦	-			1
O-Xylene	♦	♦	-			1
Xylenes (total)	4.8	ND	ND			1
TOTAL BTEX	17.9	ND	0			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			ND			50
Napthalene			ND			25
Metals (ug/L)						
Chloride	40,000	♦	♦			250,000
Sodium	35,000	♦	♦			20,000
Iron (total)	♦	♦	2700			300
Iron (dissolved)	♦	♦	1880			300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	ND			10,000
Sulfate	♦	♦	15,000			250,000
TOC	♦	♦	16,000			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	78,000			N/A
Dissolved Oxygen	3.2	3.12	4.43			N/A

WELL ID: MW 8	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	68	6	ND			50
Benzene	110	ND	ND			1
Toluene	26	ND	2			1
Ethylbenzene	60	ND	ND			1
m,p-Xylene	160	ND	-			1
O-Xylene	40	ND	-			1
Xylenes (total)	200	ND	34			1
TOTAL BTEX	396.0	ND	36			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			ND			50
Napthalene	34		ND			25
Metals (ug/L)						
Chloride	5,000	♦	♦			250,000
Sodium	63,000	♦	♦			20,000
Iron (total)	8,600	♦	545			300
Iron (dissolved)	230	♦	ND			300
Lead	ND	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	33	♦	ND			10,000
Sulfate	ND	♦	31,000			250,000
TOC	12,000	♦	21,000			N/A
Petroleum Hydrocarbon	7,600	♦	♦			N/A
Carbon Dioxide	264,000	♦	37,000			N/A
Dissolved Oxygen	1.5	6.3	4.6			N/A

MONITORING WELL DATA SUMMARY
MAY 2000 (BASELINE DATA)
Harrison Subresidency

WELL ID: MW 9	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	ND	ND	ND			50
Benzene	ND	ND	ND			1
Toluene	ND	ND	ND			1
Ethylbenzene	ND	ND	ND			1
m,p-Xylene	♦	♦	-			1
O-Xylene	♦	♦	-			1
Xylenes (total)	ND	ND	ND			1
TOTAL BTEX	ND	ND	0			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			2 J			50
Napthalene			ND			25
Metals (ug/L)						
Chloride	260,000	♦	♦			250,000
Sodium	160,000	♦	♦			20,000
Iron (total)	♦	♦	4570			300
Iron (dissolved)	♦	♦	ND			300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	ND			10,000
Sulfate	♦	♦	21,000			250,000
TOC	♦	♦	18,000			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	ND			N/A
Dissolved Oxygen	3.3	7.5	5.49			N/A

WELL ID: PC 1	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	ND	ND	NA			50
Benzene	ND	ND	NA			1
Toluene	ND	ND	NA			1
Ethylbenzene	ND	ND	NA			1
m,p-Xylene	ND	ND	NA			1
O-Xylene	ND	ND	NA			1
Xylenes (total)	ND	ND	NA			1
TOTAL BTEX	ND	ND	NA			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			NA			50
Napthalene			NA			25
Metals (ug/L)						
Chloride	34,000	♦	NA			250,000
Sodium	120,000	♦	NA			20,000
Iron (total)	17,000	♦	NA			300
Iron (dissolved)	ND	♦	NA			300
Lead	7	♦	NA			25
Other (ug/L)						
Nitrogen, Nitrate	ND	♦	NA			10,000
Sulfate	23,000	♦	NA			250,000
TOC	13,000	♦	NA			N/A
Petroleum Hydrocarbon	♦	♦	NA			N/A
Carbon Dioxide	67,000	♦	NA			N/A
Dissolved Oxygen	2.4	4.11	NA			N/A

MONITORING WELL DATA SUMMARY
MAY 2000 (BASELINE DATA)
Harrison Subresidency

WELL ID: SP 1	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	3.2	31	ND			50
Benzene	1.4	ND	ND			1
Toluene	3.7	ND	ND			1
Ethylbenzene	4.0	ND	ND			1
m,p-Xylene	8.1	-	-			1
O-Xylene	2.9	-	-			1
Xylenes (total)	11.0	ND	ND			1
TOTAL BTEX	31.1	ND	ND			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			♦			50
Napthalene			1			25
Metals (ug/L)						
Chloride	16,000	♦	♦			250,000
Sodium	45,000	♦	♦			20,000
Iron (total)	♦	♦				300
Iron (dissolved)	♦	♦				300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	♦			10,000
Sulfate	♦	♦	♦			250,000
TOC	♦	♦	♦			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	♦			N/A
Dissolved Oxygen	4.6	9.66	4.6			N/A

WELL ID: SP 1B	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	4.9	♦	ND			50
Benzene	2.1	♦	ND			1
Toluene	ND	♦	ND			1
Ethylbenzene	ND	♦	ND			1
m,p-Xylene	3.5	♦	-			1
O-Xylene	5.6	♦	-			1
Xylenes (total)	9.1	♦	ND			1
TOTAL BTEX	20.3	♦	ND			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			♦			50
Napthalene			1			25
Metals (ug/L)						
Chloride	34,000	♦	♦			250,000
Sodium	27,000	♦	♦			20,000
Iron (total)	♦	♦				300
Iron (dissolved)	♦	♦				300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	♦			10,000
Sulfate	♦	♦	♦			250,000
TOC	♦	♦	♦			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	♦			N/A
Dissolved Oxygen	4.7		4.91			N/A

MONITORING WELL DATA SUMMARY
MAY 2000 (BASELINE DATA)
Harrison Subresidency

WELL ID: SP 2	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	18	♦	14			50
Benzene	19	♦	ND			1
Toluene	25	♦	ND			1
Ethylbenzene	110	♦	ND			1
m,p-Xylene	52	♦	-			1
O-Xylene	11	♦	-			1
Xylenes (total)	63	♦	ND			1
TOTAL BTEX	**217.0**	♦	**0.0**			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			♦			50
Napthalene			1			25
Metals (ug/L)						
Chloride	36,000	♦	♦			250,000
Sodium	**75,000**	♦	♦			20,000
Iron (total)	♦	♦				300
Iron (dissolved)	♦	♦				300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	♦			10,000
Sulfate	♦	♦	♦			250,000
TOC	♦	♦	♦			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	♦			N/A
Dissolved Oxygen	2.5	♦	3.1			N/A

WELL ID: SP 3	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	38	♦	7			50
Benzene	110	♦	ND			1
Toluene	39	♦	ND			1
Ethylbenzene	200	♦	ND			1
m,p-Xylene	180	♦	-			1
O-Xylene	57	♦	-			1
Xylenes (total)	237	♦	15			1
TOTAL BTEX	**586.0**	♦	**15.0**			100
Semi-volatile org.(ug/l)						
2-Methylnaphthalene			♦			50
Napthalene			1			25
Metals (ug/L)						
Chloride	6,000	♦	♦			250,000
Sodium	**38,000**	♦	♦			20,000
Iron (total)	♦	♦	♦			300
Iron (dissolved)	♦	♦	♦			300
Lead	♦	♦	♦			25
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	♦			10,000
Sulfate	♦	♦	♦			250,000
TOC	♦	♦	♦			N/A
Petroleum Hydrocarbon	♦	♦	♦			N/A
Carbon Dioxide	♦	♦	♦			N/A
Dissolved Oxygen	3.4	♦	4.21			N/A

MONITORING WELL DATA SUMMARY
MAY 2000 (BASELINE DATA)
Harrison Subresidency

WELL ID: SP 4	BASELINE (May 2000)	2001 QUARTER 1 (JAN 2001)	2001 QUARTER 2	2001 QUARTER 3	2001 QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/L)						
MTBE	24	♦	ND			**50**
Benzene	24	♦	ND			**1**
Toluene	3.8	♦	ND			**1**
Ethylbenzene	35	♦	ND			**1**
m,p-Xylene	9.5	♦	-			**1**
O-Xylene	2.4	♦	-			**1**
Xylenes (total)	11.9	♦	ND			**1**
TOTAL BTEX	74.7	♦	**0.0**			**100**
Semi-volatile org.(ug/l)						
2-Methylnaphthalene		♦	♦			**50**
Napthalene		♦	**1**			**25**
Metals (ug/L)						
Chloride	16,000	♦	♦			**250,000**
Sodium	**24,000**	♦	♦			**20,000**
Iron (total)	♦	♦	♦			**300**
Iron (dissolved)	♦	♦	♦			**300**
Lead	♦	♦	♦			**25**
Other (ug/L)						
Nitrogen, Nitrate	♦	♦	♦			**10,000**
Sulfate	♦	♦	♦			**250,000**
TOC	♦	♦	♦			**N/A**
Petroleum Hydrocarbon	♦	♦	♦			**N/A**
Carbon Dioxide	♦	♦	♦			**N/A**
Dissolved Oxygen	4.2	♦	6.89			**N/A**

♦ - Not analyzed.
NA - Not available and/or not analyzed.
N/A - not applicable.
ND - Not detected at analytical reporting limit.
Note - Numbers in bold exceed Target Effluent Criterion.
- indicates included in Total, I.e. Total xylenes.
J - estimated concentration; compound present below quantitation limit.

ATTACHMENT B

WELL SAMPLING LOGS

LMS Well Sampling Log

Well ID No.: MW-1

Well Casing Type: 4" PVC
Well Depth:** 8.58
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: 4.49
Water Column Ht.: 4.09
Well Casing Volume (gallons): 2.67/8
SWL During Sampling: 4.57
Sample Time: 1520
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/23/02
Crew: TMS/MP
Purge Method: Submersible Pump
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.0 - 0.1

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0	0.5	8.50	240	3	8.5	9.0	0.1	150		.
	4	0.5	7.50	281	3	8.3	8.8	0.1	165		.
	8	0.5	8.50	239	56	8.1	8.9	0.1	145		.
	Sampling		8.20	234	14	8.3	8.9	0.1	80		

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: MW-2

Well Casing Type: 4" PVC
Well Depth:** 10.29
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: 6.00
Water Column Ht.: 4.29
Well Casing Volume (gallons): 2.8/8.5
SWL During Sampling: 5.61
Sample Time: 1540
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/23/02
Crew: TMS/MP
Purge Method: Submersible Pump
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.0 - 0.1

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0	0.5	7.80	602	178	3.3	10.3	0.3	-65		Dry at 5 gallons - restart - dry at 7 gallons
	10	0.5	7.50	647	151	4.4	11.7	0.3	-55		Restart
	Sampling	0.5	7.60	687	180	3.6	10.8	0.3	-60		

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: MW-3

Well Casing Type: 4" PVC
Well Depth:** 10.75
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: 6.00
Water Column Ht.: 4.75
Well Casing Volume (gallons): 3.1/9.5
SWL During Sampling: 6.1
Sample Time: 1600
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/23/02
Crew: TMS/MP
Purge Method: Submersible Pump
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.3-0.9

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0	0.5	7.50	751	547	2.2	12.3	0.4	-100		Odor
	13	0.5	7.60	749	224	3.4	12.8	0.4	-95		Odor
	Sampling	0.5	7.30	739	164	3	12.1	0.4	-80		Odor
		.									

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: MW-4

Well Casing Type: 4" PVC
Well Depth:** 11.62
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: 5.98
Water Column Ht.: 5.64
Well Casing Volume (gallons): 3.68/11
SWL During Sampling: 5.9
Sample Time: 1615
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/23/02
Crew: TMS/MP
Purge Method: Submersible Pump
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.0 - 0.1

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0	0.5	7.50	850	254	4.1	12.2	0.1	105		
	10	0.5	7.60	260	252	3.2	12.3	0.1	105		
	15	0.5	7.50	626	254	5.7	12.7	0.1	95		
	Sampling	.	7.80	262	19	3.9	11.8	0.1	25		

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: MW-5

Well Casing Type: 4" PVC
Well Depth:** 11
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: 6.35
Water Column Ht.: 4.65
Well Casing Volume (gallons): 3.04/9.1
SWL During Sampling: 6.43
Sample Time: 1625
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/23/02
Crew: TMS/MP
Purge Method: Submersible Pump
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.0 - 0.1

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0	0.5	7.80	151	114	9.2	8.6	0.1	-90		
	10	0.5	7.80	219	55	8.7	8.8	0.1	-35		
	Sampling	0.5	7.80	172	32	9	10.1	0.1	-25		

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: MW-6

Well Casing Type: 4" PVC
Well Depth:** 14.77
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: 7.13
Water Column Ht.: 7.64
Well Casing Volume (gallons): 5.0/15.0
SWL During Sampling: 7.25
Sample Time: 1700
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/23/02
Crew: TMS/MP
Purge Method: Submersible Pump
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 100-376

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0	0.5	7.50	570	65	2.7	13.0	0.3	-50		Stong Odor
	7	0.5	7.50	572	67	2.7	12.8	0.3	-45		Stong Odor
	17	0.5	7.50	578	111	4.3	13.8	0.3	-55		Stong Odor
	21	0.5	7.30	586	26	2.7	14.4	0.3	-60		Stong Odor
	Sampling	0.5	7.50	587	21	3.5	13.2	0.3	-30		Stong Odor

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: MW-7

Well Casing Type: 4" PVC
Well Depth:** 14.67
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: 6.97
Water Column Ht.: 7.7
Well Casing Volume (gallons): 5.0/15.0
SWL During Sampling: 5.92
Sample Time: 1645
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/23/02
Crew: TMS/MP
Purge Method: Submersible Pump
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.0 - 0.2

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0	0.5	7.60	525	72	2.6	12.6	0.3	-75		
	17	0.5	7.30	529	170	4.5	11.9	0.3	-60		
	20	0.5	7.30	540	104	2.3	12.6	0.3	-60		
	Sampling	0.5	7.50	532	98	3.4	12.2	0.3	-30		

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: MW-9

Well Casing Type: 2" PVC
Well Depth:** 13.74
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: 8.43
Water Column Ht.: 5.31
Well Casing Volume (gallons): 1.1/3.5
SWL During Sampling: 8.4
Sample Time: 1725
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/23/02
Crew: TMS/MP
Purge Method: Submersible Pump
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.0 - 0.1

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0	0.5	8.50	434	43	11.1	11.2	0.2	25		
	5	0.5	8.50	445	18	10.7	11.5	0.2	25		
	Sampling		8.40	442	71	12.3	10.9	0.2	25		

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: PC-1

Well Casing Type: 2" PVC Pezometer
Well Depth:** 6.87
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Cloudy, 45 degrees.

Start SWL: WELL DRY
Water Column Ht.: N/A
Well Casing Volume (gallons): N/A
SWL During Sampling: N/A
Sample Time: N/A
Sample Method: N/A
Sample Analyses: No Samples Collected - Well is dry.

Project: Harrison SVE 446-311
Date: 01/23/2002, 1/24/02
Crew: TMS/MP
Purge Method: WELL DRY
Meters Used: N/A
PID Head Space (ppm): 0.0 - 0.1, 0.0-0.1

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)		Salinity (%)	ORP (mV)	Depth to Water*	Comments
											WELL DRY

Comments: WELL DRY - NO SAMPLES COLLECTED

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: SP-1

Well Casing Type: 1.5" PVC
Well Depth:** 19.18
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Rain/Drizzle, 40 degrees.

Start SWL: 5.60
Water Column Ht.: 13.58
Well Casing Volume (gallons): 1.25/4
SWL During Sampling: 5.67
Sample Time: 1215
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/24/01
Crew: TMP/ET
Purge Method: Bailer
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.1

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0		8.20	484	6	5	12.6	0.2	165		
	5		8.10	568	192	4.3	13.4	0.2	140		
	Sampling		7.80	563	61	2.3	12.7	0.2	85		

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: SP-1B (MW-10B)

Well Casing Type: 1.5" PVC
Well Depth:** 26.77
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Rain/Drizzle, 40 degrees.

Start SWL: N/A
Water Column Ht.: N/A
Well Casing Volume (gallons): N/A
SWL During Sampling: N/A
Sample Time: N/A
Sample Method: N/A
Sample Analyses: No Samples Collected - Unable to open well.

Project: Harrison SVE 446-311
Date: 1/24/02
Crew: TMS/ET
Purge Method: N/A
Meters Used: N/A
PID Head Space (ppm): N/A

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments

Comments: Unable to open well. Well is marked "MW-10B"

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: SP-2

Well Casing Type: 1.5" PVC
Well Depth:** 18.48 ft
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Rain/Drizzle, 40 degrees.

Start SWL: 8.17
Water Column Ht.: 10.31
Well Casing Volume (gallons): 0.950/3
SWL During Sampling: 9.4
Sample Time: 1230
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/24/02
Crew: TMS/ET
Purge Method: Bailer
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 0.2-0.5

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0		8.00	560	25	5.6	12.9	0.3	45		
	5		8.10	713	778	5.3	13.5	0.4	-51		
	Sampling		8.00	921	141	4	12.8	0.3	-26		

Comments: Water is turbid.

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: SP-3

Well Casing Type: 1.5" PVC
Well Depth:** 19.95
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Rain/Drizzle, 40 degrees.

Start SWL: 8
Water Column Ht.: 11.95
Well Casing Volume (gallons): 1.1/3.5
SWL During Sampling: 9.42
Sample Time: 1245
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/24/02
Crew: TMS/ET
Purge Method: Bailer
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 1.6-4.3

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0		8.30	345	44	8.2	13.5	0.2	-38		
	5		8.20	367	48	7	13.3	0.2	-55		
	Sampling		8.00	447	27	5.7	13.2	0.2	-67		

Comments:

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

LMS Well Sampling Log

Well ID No.: SP-4

Well Casing Type: 1.5" PVC
Well Depth:** 20.9 ft
Screened Interval: N/A
Well Elevation:** N/A
Ground Elevation: N/A
Well Condition: Fair
Weather Conditions: Rain/Drizzle, 40 degrees.

Start SWL: 6.42
Water Column Ht.: 14.48
Well Casing Volume (gallons): 1.33/4
SWL During Sampling: 7.55
Sample Time: 1315
Sample Method: Bailer
Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2,4500-S04, 415.1, and 4500-CO2D

Project: Harrison SVE 446-311
Date: 1/24/02
Crew: TMS/ET
Purge Method: Bailer
Meters Used: DRT15CE, YSI30-02, YSI21, ORP-9, CP98-12
PID Head Space (ppm): 1.8-4.4

Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond.	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	ORP (mV)	Depth to Water*	Comments
	0		7.80	525	29	3.7	12.4	0.3	-70		
	5		8.00	525	39	4.2	13.1	0.3	-80		
	Sampling		7.90	430	32	4.2	13.3	0.3	-80		

Comments:

Notes: Volume is measured in Gallons
* - Measurement taken from top of well casing

ATTACHMENT C

MONITORING WELL BORING LOGS

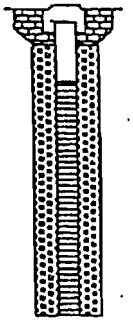
Tyree Environmental Technologies Danbury, CT.

BORING/WELL LOG

BORING/WELL NO. MW-1

CLIENT: NYS OFFICE OF GENERAL SERVICES
PROJECT: NYS DOT MAINTAINANCE GARAGE
LOCATION: NEW KING STREET, HARRISON, NY

DATE STARTED: APRIL 3, 1995
DATE COMPLETED: APRIL 3, 1995
DRILLER: CONNECTICUT TEST BORINGS
LOGGED BY: CHRISTIAN FITZGERALD

Depth Below Grade	P.I.D. Reading (ppm)	Blow Counts	Well Completion	Field Description of Soil
0	13.4	3-3		0-0.5' Asphalt and Base
		4-5		0-2' brown-orange silts/clay w/fs
				2-5' brown silts and fine sand w/some gravel
5	0.0	17-16		5-7' brown silts and fines w/gneiss and quartz gravel
		14-15		7-9' brown silt w/some gravel to refusal
10				
15				
20				
25				
30				
35				

BORE HOLE DATA

Drilling Method: Hollow Stem Auger
Hole Dia.: 10.5"
Depth: 8.5'

WELL DATA

Riser
Type: SCH 40 PVC
Riser Dia.: 4"
Riser Length: 1'
Interval: 0' BG - 1' BG

Screen
Type: Sch 40 PVC
Screen Dia.: 4"
Screen Length: 7.5'
Slot: 0.010"
Interval: 1' -8.5'

FILTER PACK

Source: Morie Company, NJ
Composition: #2 Silica Sand
Volume Used: 6 cubic ft.
Interval: 1' - 8.5'

GROUT / SEAL

Type: Bentonite/Cement Mix
Volume Used: 1 cubic ft.
Interval: .5' - 1'

WELL HEAD COMPLETION

Manhole: ☒ YES ☐ NO
Size: 12"
Concrete Pad: ☒ YES ☐ NO
Size: 24" x 24" x 8"

WELL DEVELOPMENT

Performed: ☒ YES ☐ NO
Method: 12V sub-pump
Duration: 5 well volumes
Date: 4/11/95

LEGEND

concrete
native soil
bentonite seal
well sand
solid PVC
slotted PVC

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
course sand=0.5-1mm
very course sand=1-2mm

pebble=2-4mm
gravel=4-64mm
cobble=64-256mm
boulder=256mm
groundwater table

Tyree Environmental Technologies Danbury, CT.

BORING/WELL LOG

BORING/WELL NO. MW-2

CLIENT: NYS OFFICE OF GENERAL SERVICES
PROJECT: NYS DOT MAINTAINANCE GARAGE
LOCATION: NEW KING STREET, HARRISON, NY

DATE STARTED: APRIL 3, 1995
DATE COMPLETED: APRIL 3, 1995
DRILLER: CONNECTICUT TEST BORINGS
LOGGED BY: CHRISTIAN FITZGERALD

Depth Below Grade	P.I.D. Reading (ppm)	Blow Counts	Well Completion	Field Description of Soil
0	252	9-12		0-0.5' Asphalt and Base
		9-7		0.5-2' fine yellow sand to dark clay w/some kneiss gravel
5	1567	6-11		2-5' organics, dark soil w/some fine sands
		10-11		5-7' clays and silts with organics and quartz gravel
10	567	8-16		7-10' organics, dark brown fs w/little gravel
		26-50		10-12' weathered rock, refusol at 12'
15				
20				
25				
30				
35				

BORE HOLE DATA

Drilling Method: Hollow Stem Auger
Hole Dia.: 10.5"
Depth: 12'

WELL DATA

Riser
Type: SCH 40 PVC
Riser Dia.: 4"
Riser Length: 2'
Interval: 0.5' BG - 2' BG

Screen
Type: Sch 40 PVC
Screen Dia.: 4"
Screen Length: 10'
Slot: 0.010"
Interval: 2' -12'

FILTER PACK

Source: Morie Company, NJ
Composition: #2 Silica Sand
Volume Used: 7 cubic ft.
Interval: 1' - 12'

GROUT / SEAL

Type: Bentonite/Cement Mix
Volume Used: 1 cubic ft.
Interval: .5' - 1'

WELL HEAD COMPLETION

Manhole: ☒ YES ☐ NO
Size: 12"
Concrete Pad: ☒ YES ☐ NO
Size: 24" x 24" x 8"

WELL DEVELOPMENT

Performed: ☒ YES ☐ NO
Method: 12V sub-pump
Duration: 5 well volumes
Date: 4/11/95

LEGEND

concrete
native soil
bentonite seal
well sand
solid PVC
slotted PVC

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
course sand=0.5-1mm
very course sand=1-2mm

pebble=2-4mm
gravel=4-64mm
cobble=64-256mm
boulder=256mm
groundwater table

Tyree Environmental Technologies Danbury, CT.

BORING/WELL LOG

BORING/WELL NO. MW-3

CLIENT: NYS OFFICE OF GENERAL SERVICES
PROJECT: NYS DOT MAINTAINANCE GARAGE
LOCATION: NEW KING STREET, HARRISON, NY

DATE STARTED: APRIL 3, 1995
DATE COMPLETED: APRIL 3, 1995
DRILLER: CONNECTICUT TEST BORINGS
LOGGED BY: CHRISTIAN FITZGERALD

Depth Below Grade	P.I.D. Reading (ppm)	Blow Counts	Well Completion	Field Description of Soil
0	327	9-13		0-0.5' asphalt and base
		11-12		0.5-2' fine yellow sand to dark clay w/some kneiss gravel
				2-5' organics, dark soil w/some fine sands
5	1307	4-6		5-7' clays and silts with organics and quartz gravel
		4-5		
				7-10' organics, dark brown fs w/little gravel
10	1357	9-4		10-12' weathered rock, refusal at 12'
		2-6		
15				
20				
25				
30				
35				

BORE HOLE DATA

Drilling Method: Hollow Stem Auger
Hole Dia.: 10.5"
Depth: 12'

WELL DATA

Riser
Type: SCH 40 PVC
Riser Dia.: 4"
Riser Length: 2'
Interval: 0' BG - 2' BG

Screen
Type: Sch 40 PVC
Screen Dia.: 4"
Screen Length: 10'
Slot: 0.010"
Interval: 2' -12'

FILTER PACK

Source: Morie Company, NJ
Composition: #2 Silica Sand
Volume Used: 9 cubic ft.
Interval: 1' - 12'

GROUT / SEAL

Type: Bentonite/Cement Mix
Volume Used: 1 cubic ft.
Interval: .5' - 1'

WELL HEAD COMPLETION

Manhole: ☒ YES ☐ NO
Size: 12"
Concrete Pad: ☒ YES ☐ NO
Size: 24" x 24" x 8"

WELL DEVELOPMENT

Performed: ☒ YES ☐ NO
Method: 12V sub-pump
Duration: 5 well volumes
Date: 4/11/95

LEGEND

concrete
native soil
bentonite seal
well sand
solid PVC
slotted PVC

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
course sand=0.5-1mm
very course sand=1-2mm

pebble=2-4mm
gravel=4-64mm
cobble=64-256mm
boulder=256mm
groundwater table

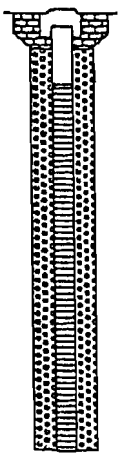
Tyree Environmental Technologies Danbury, CT.

BORING/WELL LOG

BORING/WELL NO. MW-4

CLIENT: NYS OFFICE OF GENERAL SERVICES
PROJECT: NYS DOT MAINTAINANCE GARAGE
LOCATION: NEW KING STREET, HARRISON, NY

DATE STARTED: APRIL 3, 1995
DATE COMPLETED: APRIL 3, 1995
DRILLER: CONNECTICUT TEST BORINGS
LOGGED BY: CHRISTIAN FITZGERALD

Depth Below Grade	P.I.D. Reading (ppm)	Blow Counts	Well Completion	Field Description of Soil
0	180	7-8		0-0.5' asphalt and base
		4-8		0.5-2' organics with fine lite brown sand
				2-5' organics, dark soil w/some fine sands
5	0.0	5-8		
		16-26		5-7' dark brown fs w/little gravel
				7-10' organics, dark brown fs w/little gravel
10	747	7-23		
		11-12		10-12' weathered rock, refusal at 12'
15				
20				
25				
30				
35				

BORE HOLE DATA

Drilling Method: Hollow Stem Auger
Hole Dia.: 10.5"
Depth: 12'

WELL DATA

Riser
Type: SCH 40 PVC
Riser Dia.: 4"
Riser Length: 2'
Interval: 0' BG - 2' BG

Screen
Type: Sch 40 PVC
Screen Dia.: 4"
Screen Length: 10'
Slot: 0.010"
Interval: 2' -12'

FILTER PACK

Source: Morie Company, NJ
Composition: #2 Silica Sand
Volume Used: 9 cubic ft.
Interval: 1' - 12'

GROUT / SEAL

Type: Bentonite/Cement Mix
Volume Used: 1 cubic ft.
Interval: .5' - 1'

WELL HEAD COMPLETION

Manhole: ☒ YES ☐ NO
Size: 12"
Concrete Pad: ☒ YES ☐ NO
Size: 24" x 24" x 8"

LEGEND

concrete
native soil
bentonite seal
well sand
solid PVC
slotted PVC

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
course sand=0.5-1mm
very course sand=1-2mm

pebble=2-4mm
gravel=4-64mm
cobble=64-256mm
boulder=256mm
groundwater table

WELL DEVELOPMENT

Performed: ☒ YES ☐ NO
Method: 12V sub-pump
Duration: 5 well volumes
Date: 4/11/95

Tyree Environmental Technologies
Old Lyme, CT.

BORING/WELL LOG

BORING/WELL NO
MW-5

CLIENT: State of New York Office of General Services
PROJECT: NYSDOT Building
LOCATION: Old King Street Connector, Morrison, NY

DATE STARTED: October 27 1995
DATE COMPLETED: October 27, 1995
DRILLER: Connecticut Test Borings, Inc.
LOGGED BY: Brent Tiffeau

Depth Below Grade	P.I.D. Reading (ppm)	Blow Counts	Well Completion	Field Description of Soil
0				0'-.25' asphalt
5	158.4			Split Spoon Sample 3'-5' black to dark brown fine compact sand
				5'-10' gray silt, little very fine to coarse sand fine to coarse gravel, occasional cobbles (till)
10	1176	4,10,11,15		Split Spoon Sample 10'-12' weathered rock, 2" dark brown sand
				END OF BORING
15				
20				
25				
30				
35				

BORE HOLE DATA

Drilling Method: H.S.A.
Hole Dia.: 6 1/4"
Depth: 12'

WELL DATA

Riser
Type: PVC
Riser Dia.: 4"
Riser Length: 2'
Interval: 0-2'

Screen
Type: PVC
Screen Dia.: 4"
Screen Length: 10'
Slot: 0.010"
Interval: 2'-12'

FILTER PACK

Source: Morie Company
Composition: #2 silica sand
Volume Used:
Interval: 1.5'-12'

GROUT/SEAL

Type: Bentonite Chips
Volume Used:
Interval: 1'-1.5'

WELL HEAD COMPL.

Riser: ☐ YES ☒ NO
Type: manhole
Concrete Pad: ☒ YES ☐ NO
Size: 12"

WELL DEVELOPMENT

Performed: ☒ YES ☐ NO
Method: Bailed
Duration:
Date:

LEGEND

- concrete
- native soil
- bentonite seal
- well sand
- solid PVC
- slotted PVC

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

pebble=2-4mm
gravel=4-64mm
cobble=64-256mm
boulder=256mm
groundwater table

Tyree Environmental Technologies Danbury, CT.

BORING/WELL LOG

BORING/WELL NO.
MW-6

CLIENT: State of New York Office of General Services
PROJECT: NYSDOT Building
LOCATION: Old King Street Connector Harrison, NY

DATE STARTED: October 27, 1993
DATE COMPLETED: October 27, 1993
DRILLER: Connecticut Test Borings, Inc.
LOGGED BY: Brent Fitteron

Depth Below Grade	P.I.D. Reading (ppm)	Blow Counts	Well Completion	Field Description of Soil
0				0'-.25' asphalt
	130	5,3,4,7		Split Spoon Sample 3'-5' black to dark gray sand (compact)
5	177	7,9,11,15		Split Spoon Sample 5'-7' till, some cobbles, dark brown fine/medium sand
10	413	3,3,5,11		Split Spoon Sample 10'-12' weathered rock, black to brown fine sand, black to gray medium sand
				groundwater at 13'
15				END OF BORING
20				
25				
30				
35				

BORE HOLE DATA

Drilling Method: H.S.A.
Hole Dia.: 6 1/4"
Depth: 15'

WELL DATA

Riser
Type: PVC
Riser Dia.: 4"
Riser Length: 5'
Interval: 0-5'

Screen
Type: PVC
Screen Dia.: 4"
Screen Length: 10'
Slot: 0.010"
Interval: 5'-15'

FILTER PACK

Source: Morie Company
Composition: #2 silica sand
Volume Used:
Interval: 4'-15'

GROUT/SEAL

Type: Bentonite Chips
Volume Used:
Interval: 2'-4'

WELL HEAD COMPL.

Riser: ☐ YES ☒ NO
Type: manhole
Concrete Pad: ☒ YES ☐ NO
Size: 12"

WELL DEVELOPMENT

Performed: ☒ YES ☐ NO
Method: Bailed
Duration:
Date:

LEGEND

concrete
native soil
bentonite seal
well sand
solid PVC
slotted PVC

trace=1-10%
little=10-20%
some=30-30%
and=30-50%

very fine sand=0.0-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

pebble=2-4mm
gravel=4-64mm
cobble=64-256mm
boulder=256mm
groundwater table

Tyree Environmental Technologies Danbury, CT.

BORING/WELL LOG

BORING/WELL NO. MW-7

CLIENT: State of New York Office of General Services
PROJECT: NYSDOT Building
LOCATION: Old Nine Street Corporter Harrison NY

DATE STARTED: October 27, 1995
DATE COMPLETED: October 27, 1995
DRILLER: Connecticut Test Borings, Inc.
LOGGED BY: Brent Fitteron

Depth Below Grade	P.I.D. Reading (ppm)	Blow Counts	Well Completion	Field Description of Soil
0				0'-.25' asphalt
	4.2	1,3,3,5		Split Spoon Sample 3'-5' gray compact fine sand
5	2.2	3,6,8,8		5'-7' till, brown sand
10	3.7	10,15,17,17		Split Spoon Sample 10'-12' dark brown medium sand groundwater at 12'
				.15' dark gray loose medium sand
15	2.3			END OF BORING
20				
25				
30				
35				

BORE HOLE DATA

Drilling Method: H.S.A.
Hole Dia.: 6 1/4"
Depth: 15'

WELL DATA

Riser
Type: PVC
Riser Dia.: 4"
Riser Length: 5'
Interval: 0-5'

Screen
Type: PVC
Screen Dia.: 4"
Screen Length: 10'
Slot: 0.010"
Interval: 5'-15'

FILTER PACK

Source: Merle Company
Composition: #2 silica sand
Volume Used:
Interval: 4'-15'

GROUT/SEAL

Type: Bentonite Chips
Volume Used:
Interval: 2'-4'

WELL HEAD COMPL.

Riser: ☐ YES ☒ NO
Type: manhole
Concrete Pad: ☒ YES ☐ NO
Size: 12"

WELL DEVELOPMENT

Performed: ☒ YES ☐ NO
Method: Bailed
Duration:
Date:

LEGEND

concrete
native soil
bentonite seal
well sand
solid PVC
slotted PVC

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

pebble=2-4mm
gravel=4-64mm
cobble=64-256mm
boulder=256mm
groundwater table

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 446-158

PROJECT NAME: Harrison Subresidency

WELL No.: MW-9

CLIENT: NYSDOT

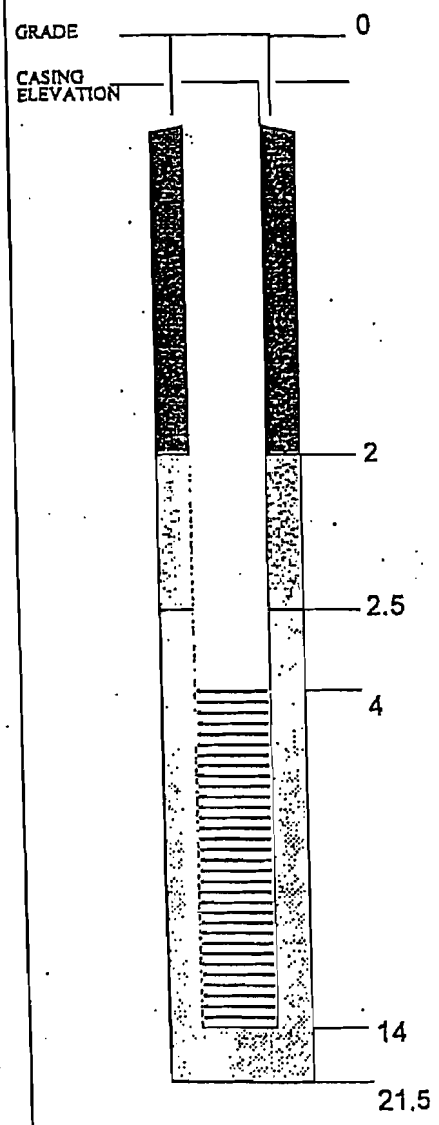
LOCATION: Harrison, NY

DATE DRILLED: 17-Mar-99

DATE DEVELOPED: 18-Mar-99

WELL CONSTRUCTION COMPLETED: 17-Mar-99

DEVELOPING METHOD: Hand surging, pumping, and balling



NOT TO SCALE

INSPECTOR: J. Thornburg

DRILLING CONTRACTOR: CT&E

TYPE OF WELL: Sparge

STATIC WATER LEVEL: 6.27 DATE: 3/23/99

MEASURING POINT: TOC TOTAL DEPTH OF WELL: 14 TOTAL DEPTH OF BORING: 21

DRILLING METHOD TYPE: HSA

DIAMETER: 8" CASING: NA

SAMPLING METHOD TYPE: NA

DIAMETER: WEIGHT:

FALL: INTERVAL:

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 1.5" LENGTH: 4 JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 4-14' DIAMETER: 1.5"

STRATIGRAPHIC UNITS SCREENED: overburden/Saprolite SLOT SIZE: 0.01

FILTER PACK GRADE: #1

SAND: X GRAVEL: NATURAL:

AMOUNT: 250# INTERVAL: 2.5-21

SEAL(s)

NOTES:

Portland Cement	INTERVAL: 2.0-17	AMOUNT:
Bentonite Slurry	INTERVAL:	AMOUNT:
Bentonite Pellets	INTERVAL: 2-2.5	AMOUNT:
Other:	INTERVAL:	AMOUNT:

LOCKING CASING: [X] YES [ ] NO KEY NO: 2402

TEST BORING/MONITORING WELL CONSTRUCTION LOG

Page 1 of 1

Project Name: Harrison Subresidency

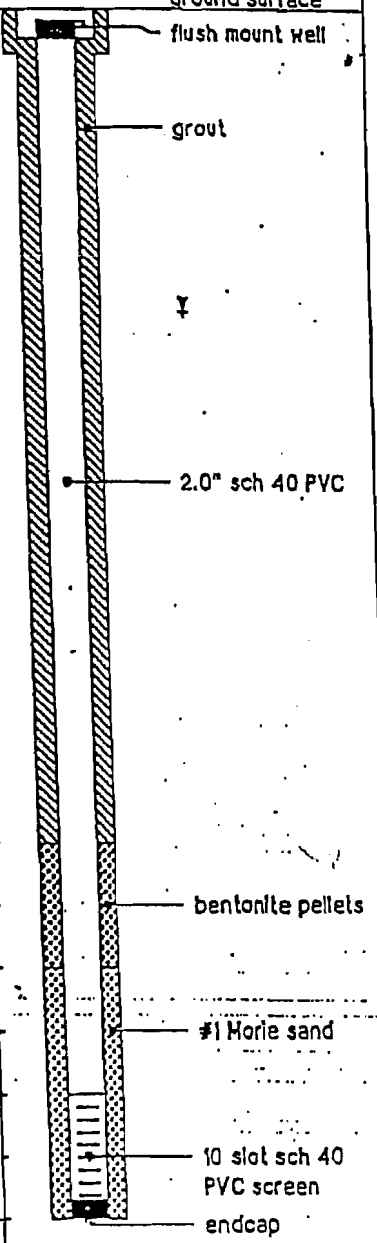
Boring I.D.: SP-01

Location: Harrison, NY
Job Number: 446-135
Client: NYSDOT
NYSDEC Site I.D.:
Boring Location:
Geologist: John Thornburg

Drilling Co.: CT&E
Drilling Method: 4.25" Hollow stem auger
Date Begin/End: 4/14/97
Surface Elevation:
Depth to Water: 5
Total Depth: 20

SPLIT-SPOON	BLOWS/6 INCHES	RECOVERY (ft)	PID / FID	LITHOLOGY	GEOLOGIC DESCRIPTION
					and = 35-50% f = fine some = 20-35% m = medium little = 10-20% c = coarse trace = 0-10%
SS-1	12 13 11	1.0			Brown, fine-medium sand, trace silt. Moist.
SS-2	10 9 8 11	2.0			Dark gray silt, fine-medium sand. Moist.
SS-3					Dark gray, fine-medium sand, little silt, trace fine gravel. Moist. Brown, fine-medium sand, trace silt. Wet. Slight petroleum odor
					Pushing cobble with augers. No split spoon recovery. Cuttings have strong odor. Fine-medium sand, some silt.
	50/0				
	50/0				
	50/0				
					END OF BORING AT 20 FT.

WELL DIAGRAM



MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 446-158

PROJECT NAME: Harrison Subresidency

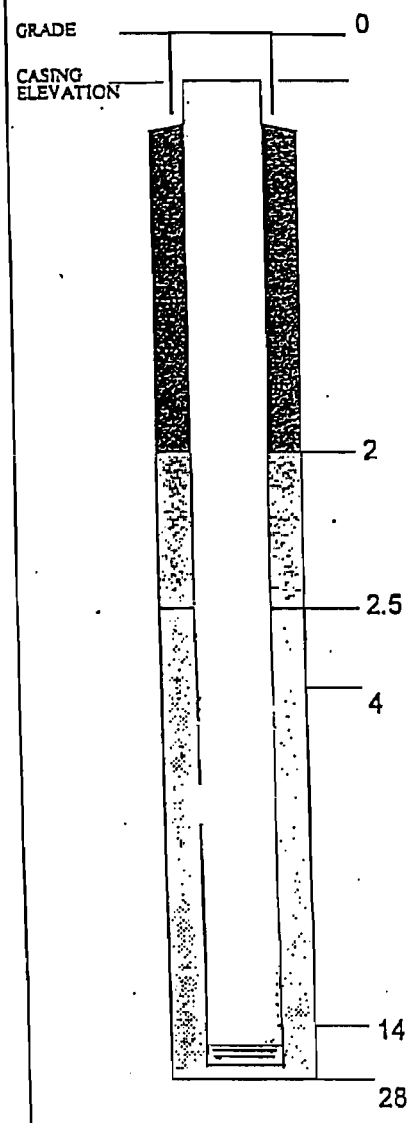
WELL No.: SP-1B

CLIENT: NYSDOT

LOCATION: Harrison, NY

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
16-Mar-99	18-Mar-99	17-Mar-99

DEVELOPING METHOD: Hand surging and pumping



NOT TO SCALE

INSPECTOR: J. Thornburg

DRILLING CONTRACTOR: CT&E

TYPE OF WELL: Sparge

STATIC WATER LEVEL: 2.64 DATE: 3/23/99

MEASURING POINT: TOC TOTAL DEPTH OF WELL: 27 TOTAL DEPTH OF BORING: 28

DRILLING METHOD TYPE: NX core

DIAMETER: 3" CASING: NA

SAMPLING METHOD TYPE: NA

DIAMETER: 2" WEIGHT: 140#

FALL: 24" INTERVAL: 10-20'

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 1.5" LENGTH: 22.5 JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 22.5-26.5 DIAMETER: 1.5"

STRATIGRAPHIC UNITS SCREENED: bedrock SLOT SIZE: 0.01

FILTER PACK GRADE: #1

SAND: X GRAVEL: NATURAL:

AMOUNT: 250# INTERVAL: 20-22.5

SEAL(s)

	INTERVAL:	AMOUNT:
Portland Cement	2.0-19	
Bentonite Slurry		
Bentonite Pellets	2-2.5	
Other:		

NOTES:

LOCKING CASING: ☐ YES ☐ NO KEY NO: slip cap

TEST BORING/MONITORING WELL CONSTRUCTION LOG

Project Name: Harrison Subresidency

Boring I.D.: SP-02

Location: Harrison, NY
Job Number: 446-135
Client: NYSDOT
NYSDEC Site I.D.
Boring Location:
Geologist: John Thornburg

Drilling Co.: CT&E
Drilling Method: 4.25" Hollow stem auger
Date Begin/End: 4/14/97
Surface Elevation:
Depth to Water: 5.5
Total Depth: 20

DEPTH	SPLIT-SPOON	BLOWS/6 INCHES	RECOVERY (ft)	PID / FID	LITHOLOGY	GEOLOGIC DESCRIPTION	WELL DIAGRAM
						and = 35-50% f = fine some = 20-35% m = medium little = 10-20% c = coarse trace = 0-10%	ground surface
2	SS-1	6 6 4	2.0			Gray and dark gray, fine-coarse sand, some gravel. Moist. FILL.	flush mount well grout
4	SS-2	4 3 4 3	0.4			Olive gray, silty fine-medium sand, trace fine gravel. Moist FILL. Cuttings have fuel odor.	
8	SS-3	7 7 17 50/3	1.5			Gray, fine-medium sand, trace fine-coarse gravel, some silt. Wet. Cuttings have fuel odor.	2.0" sch 40 PVC
14		50/0					bentonite pellets
18	SS-4	35 35 17 29	1.8			17.0-17.8 Black organic silt with roots, and decayed vegetation. 17.8-18.2 Gray rock, broken cobble. Dry. 18.2-18.8 Olive-brown, silty fine-coarse sand, some clay, trace gravel. Moist.	#1 Morie sand 10 slot sch 40 PVC screen endcap
20							

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 446-158

PROJECT NAME: Harrison Subresidency

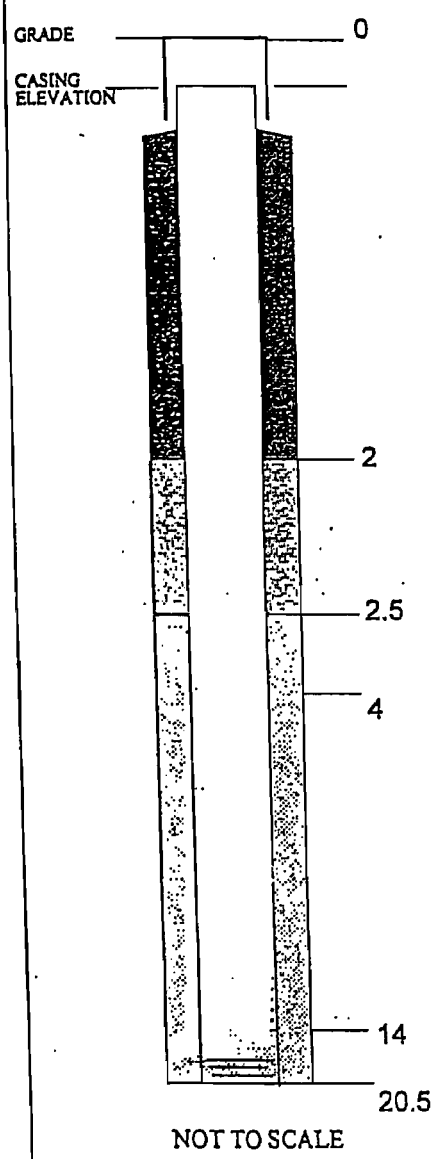
WELL No.: SP-3

CLIENT: NYSDOT

LOCATION: Harrison, NY

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
17-Mar-99	18-Mar-99	17-Mar-99

DEVELOPING METHOD: Hand surging and pumping



NOT TO SCALE

INSPECTOR: J. Thornburg

DRILLING CONTRACTOR: CT&E

TYPE OF WELL: Sparge

STATIC WATER LEVEL: 6.59 DATE: 3/23/99

MEASURING POINT: TOC TOTAL DEPTH OF WELL: 20.5 TOTAL DEPTH OF BORING: 20.5

DRILLING METHOD TYPE: HSA

DIAMETER: 8" CASING: NA

SAMPLING METHOD TYPE: NA

DIAMETER: WEIGHT:

FALL: INTERVAL:

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 1.5" LENGTH: 18 JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 18.5-20.5 DIAMETER: 1.5"

STRATIGRAPHIC UNITS SCREENED: Saprolite SLOT SIZE: 0.01

FILTER PACK GRADE: #1

SAND: X GRAVEL: NATURAL:

AMOUNT: 250# INTERVAL: 17.5-20.5

SEAL(s)

NOTES:

Portland Cement	INTERVAL: 2.0-16.5	AMOUNT:
Bentonite Slurry	INTERVAL:	AMOUNT:
Bentonite Pellets	INTERVAL: 2-2.5	AMOUNT:
Other:	INTERVAL:	AMOUNT:

LOCKING CASING: ☐ YES ☐ NO KEY NO: slip cap

LAWLER, MATUSKY & SKELLY ENGINEERS LLP

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 446-158

PROJECT NAME: Harrison Subresidency

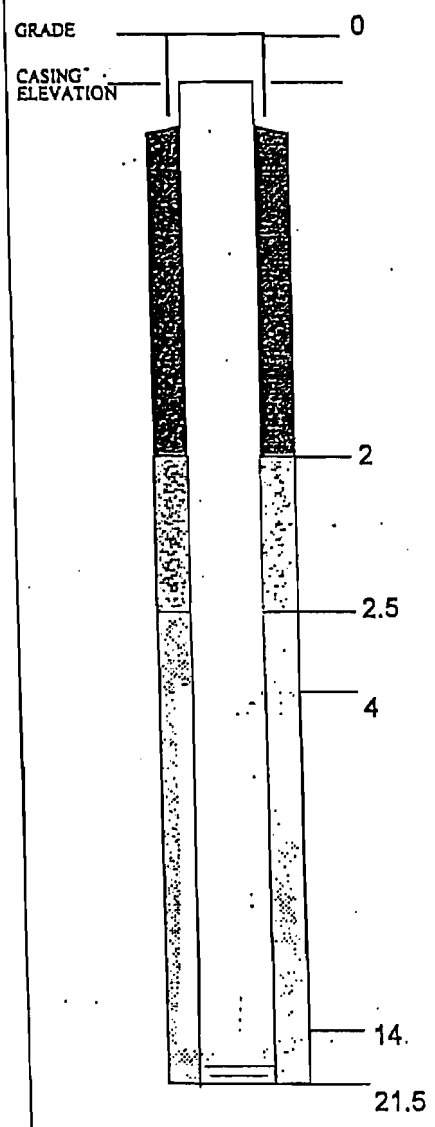
WELL No.: SP-4

CLIENT: NYSDOT

LOCATION: Harrison, NY

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
17-Mar-99	18-Mar-99	17-Mar-99

DEVELOPING METHOD: Hand surging and pumping



NOT TO SCALE

INSPECTOR: J. Thornburg

DRILLING CONTRACTOR: CT&E

TYPE OF WELL: Sparge

STATIC WATER LEVEL: 3.67 DATE: 3/23/99

MEASURING POINT: TOC TOTAL DEPTH OF WELL: 21.5 TOTAL DEPTH OF BORING: 21.5

DRILLING METHOD TYPE: HSA

DIAMETER: 8" CASING: NA

SAMPLING METHOD TYPE: NA

DIAMETER: WEIGHT:

FALL: INTERVAL:

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 1.5" LENGTH: 19 JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 19.5-21.5 DIAMETER: 1.5"

STRATIGRAPHIC UNITS SCREENED: Saprolite SLOT SIZE: 0.01

FILTER PACK GRADE: #1

SAND: X GRAVEL: NATURAL:

AMOUNT: 250# INTERVAL: 18-21.5

SEAL(s)

NOTES:

Portland Cement	INTERVAL: 2.0-17	AMOUNT:
Bentonite Slurry	INTERVAL:	AMOUNT:
Bentonite Pellets	INTERVAL: 2-2.5	AMOUNT:
Other:	INTERVAL:	AMOUNT:

LOCKING CASING: ☐ YES ☐ NO KEY NO: slip cap

LAWLER, MATUSKY & SKELLY ENGINEERS LLP

ATTACHMENT D

MITKEM ANALYTICAL DATA

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

February 8, 2002

LMS Engineering
One Blue Hill Plaza, PO Box 150
Pearl River, NY 10965
Attn: Ms. Maria Heincz

RE: Client Project: Harrison Spill Site, 446-311
Mitkem Lab Project # 90103

Dear Ms. Heincz:

Enclosed please find the data report of the required analysis for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business

Sincerely,

Agnes R. Ng
CLP Project Manager

Environmental Chemistry Section

FEB 11 2002

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • email: mitkem@mitkem.com

Mitkem Corporation

New York State Department of Environmental Conservation
Sample Identification and Analytical Requirements Summary

Project Name: HARRISON SPILL SITE [illegible] SDG: 90103

Customer Sample Code	Laboratory Sample Code	Analytical Requirements: VOA GC/MS Method #	BNA GC/MS Method #	Pest PCBs * Method #	Metals	Other Wetchem
SP-1	90103001	8260			6010	353.2/4500 415.1/[illegible]
SP-2	002	↓			↓	↓
SP-3	003	↓			↓	↓
SP-4	004	↓			↓	↓
SP-1	005				↓	
SP-2	006				↓	
SP-3	007				↓	
SP-4	008				↓	

NYASP 10/95

Mitkem Corporation

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary
Volatile (VOA) Analyses

Project Name: HARRISON SPILL SITE 446-311 SDG: 90103

Laboratory Sample ID	Matrix	Date Collected	Date Received at Lab	Date Extracted	Date Analyzed
90103001	AQ	1/24/02	1/25/02	NA	1/26/02
002	↓	↑	↓	↓	↓
003	↓	↑	↓	↓	1/30/02
004	↓	↓	↓	↓	↓

NYASP 10/95

Mitkem Corporation

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary
Volatile (VOA) Analyses

Project Name: HARRISON SPILL SITE 446311 SDG: 90103

Laboratory Sample ID	Matrix	Analytical Protocol	Extraction Method	Low/Med. Level	Dil./Conc. Factor
90103001	AQ	8260	NA	LOW	1
002	↓	↓	↓	↓	↓
003	↓	↓	↓	↓	↓
004	↓	↓	↓	↓	↓

NYASP 10/95

Mitkem Corporation

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary
Inorganic Analyses

Project Name: HARRISON SPILL SITE 496-34 SDG: 90103

Laboratory Sample ID	Matrix	Metals Requested	Date Received at Lab	Date Analyzed
90103C1	AQ	6010	1/25/02	1/25/02
002				
003				
004				
005				
006				
007				
008				

NYASP 10/95

Analytical Data Package for LMS Engineers

Client Project: Harrison Spill Site, 446-311

SDG# 90103

Mitkem Project ID: 90103

February 8, 2002

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to LMS Engineers' Harrison Spill Site project number 446-311. Under this deliverable, analysis results are presented for four aqueous samples that were received on January 25, 2002 and assigned Laboratory Number 90103. Analyses were performed per specifications in the project's contract and the chain of custody forms.

The following samples are submitted in this data package:

Client ID	Lab ID	Analysis
SP-1	90103001	V, M. DM, N, F, S, T
SP-2	90103002	V, M. DM, N, F, S, T
SP-3	90103003	V, M. DM, N, F, S, T
SP-4	90103004	V, M. DM, N, F, S, T

V = Volatile Organics – NYSDEC ASP Method 8260B
M = Iron – NYSDEC ASP Method 6010B
DM = Dissolved Iron – NYSDEC ASP Method 6010B
N = Nitrate – EPA 353.2
F = Free CO2 – SM 4500-CO2 C
S = Sulfates – SM 4500-SO4 E
T = Total Organic Carbon – EPA 415.1

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category A deliverable with the exception of nitrate, free CO2, sulfates and total organic carbon. Nitrate, free CO2, sulfates and total organic carbon are reported in the standard Mitkem format.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required.

2. Volatile Organic Analysis:

Sample results are reported to a nominal 1ppb level. These reporting limits are below the lowest initial calibration standard, but above laboratory method detection limits.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analyses.

3. Metals Analysis:

The metals analysis includes results for both total and dissolved iron. The total iron analysis has the letter "T" preceding the laboratory identification number and the dissolved iron analysis has the letter "D" preceding the laboratory identification number.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: iron was exceeded QC criteria for the serial dilution. Form Is are flagged with an "E" flag. No other unusual observation was made for the analyses.

4. Wet Chemistry Analysis:

The reporting limit for nitrate in sample SP-4 was elevated due to sample matrix interference. This analysis involves the generation of a color, which is proportional to the concentration of the analyte in the sample. Without dilution, the color of the sample obscured the color change in the analysis.

No other unusual observation was made for the analyses.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
02/08/02

Sample Transmittal Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY LAWLER, MATUSKY & SKELLY ENG.	PHONE (845) 735-8300	COMPANY SAME	PHONE SAME	LAB PROJECT #: 90103
NAME MARIA HEINCZ	FAX (845) 735-7466	NAME	FAX	
ADDRESS ONE BLUE HILL PLAZA		ADDRESS		TURNAROUND TIME:
CITY/ST/ZIP PEARL RIVER N.Y. 10950		CITY/ST/ZIP		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
HARRISON SPILL SITE	446-311	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	VOCs	TOTAL Fe	DISS. Fe*	NO2/NO3	SO4	TOC	CO2	COMMENTS
SP-1	1/24/02 1215							9	3	1	1	1	1	1	1	
SP-2	1230															
SP-3	1245															
SP-4	1315															

REQUESTED ANALYSES

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
1	J. Schneider	1/24/02		/
2		/		/
3		/	[signature]	1-25-02 0945

ADDITIONAL REMARKS: Refrig. OK
* To be filtered & preserved in lab.

COOLER TEMP: 5°

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION

01/25/02 01:31 PM | Page 1 of 2 | Original | Lab Workorder #: **90103**

Lab Workorder **90103** R0

Logged In By: NB

Reviewed By: PAS

Client: **Lawler, Matusky & Skelly Eng.**
Lab Workorder ID: **HARRISON SPILL SITE 446-311**
Client Proj ID: **446-173**
Client PO #:
Project / Profile Name: **NYSDOT Harrison SVE**
Date Due: **02/08/02**
Customer Service: **KEB**
Del Req'd: **ASP A (2 copies)**
Completed?:
Profile Notes: **8260 BTEX/MTBE+Napthalene at 1 ug/L, 8270 Napthalene & 2 methylnapthelene only**

Date Opened: **01/25/02 13:28**
Date Closed: **01/25/02 13:31**

Project Status: **WP**

Lab ID	Client ID	Matrix	Type	Analysis Code	Collected	Received	Due	Notes
90103001	SP-1	W	SAMPLE	353.2W NO2 353.2W NO3 415.1W TOC 6010W Fe 6010W PREP 8260W S4500EWSO4 S4500WFCO2	01/24/02 12:15	01/25/02	02/08/02	
90103002	SP-2	W	SAMPLE	353.2W NO2 353.2W NO3 415.1W TOC 6010W Fe 6010W PREP 8260W S4500EWSO4 S4500WFCO2	01/24/02 12:30	01/25/02	02/08/02	
90103003	SP-3	W	SAMPLE	353.2W NO2 353.2W NO3 415.1W TOC 6010W Fe 6010W PREP 8260W S4500EWSO4 S4500WFCO2	01/24/02 12:45	01/25/02	02/08/02	
90103004	SP-4	W	SAMPLE	353.2W NO2 353.2W NO3 415.1W TOC 6010W Fe	01/24/02 13:15	01/25/02	02/08/02	

MITKEM CORPORATION

Lab ID	Client ID	Matrix	Type	Analysis Code	Collected	Received	Due	Notes
90103004	SP-4	W	SAMPLE	6010W PREP 8260W S4500EWSO4 S4500WFCO2				
90103005	SP-1	W	SAMPLE	6010W Fe 6010W PREP	01/24/02 12:15	01/25/02	02/08/02	DISS METALS
90103006	SP-2	W	SAMPLE	6010W Fe 6010W PREP	01/24/02 12:30	01/25/02	02/08/02	DISS METALS
90103007	SP-3	W	SAMPLE	6010W Fe 6010W PREP	01/24/02 12:45	01/25/02	02/08/02	DISS METALS
90103008	SP-4	W	SAMPLE	6010W Fe 6010W PREP	01/24/02 13:15	01/25/02	02/08/02	DISS METALS

INVOICE AND REPORT GO TO:

Maria Heincz
Lawler, Matusky & Skelly Eng.
One Blue Hill Plz, PO Box 150
Pearl River, NY, 10965
E-Mail: mheincz@lmseng.com
W : 845-735-8300
F : 845-735-7466

MITKEM CORPORATION
Sample Condition Form

Received By: [signature] Reviewed By: CJH Date: 1-25-02 MITKEM Project: 90103

Client Project: HARRISON SALL SITE Client: LMS

Condition:		Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaO	VOA Matrix	Comments/Remarks/ Corrective Action*
1) Custody Seal(s)	Present/Absent	90103-001	<2	<2				
	Coolers/Bottles Intact/Broken	002	<2	<2				
		003	<2	<2				
2) Custody Seal Number(s)	N/A	004	<2	<2				
3) Chain-of-Custody	Present/Absent							
4) Cooler Temperature	5°							
Coolant Condition	ICE							
5) Airbill(s)	Present/Absent							
Airbill Number(s)	8257-4014							
	3059							
6) Sample Bottles	Intact							
	Broken							
	Leaking							
7) Date Received	1-25-02							
8) Time Received	0845							

VOA Matrix Key:

US=Unpreserved Soil	M-=MeOH
UA=Unpreserved Aqueous	E=Encore
M/N=MeOH & NaHSO4	H=HCl
N=NaHSO4	A=Air

* See Sample Condition Notification/Corrective Action Form yes/no

MITKEM CORPORATION

* Volatiles *

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix: (soil/water) WATER Lab Sample ID: 90103001

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7787

Level: (low/med) LOW Date Received: 01/25/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene (Total)	1	
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix: (soil/water) WATER Lab Sample ID: 90103002

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7788

Level: (low/med) LOW Date Received: 01/25/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	7	
108-88-3	Toluene	6	
100-41-4	Ethylbenzene	42	
1330-20-7	Xylene (Total)	3	
91-20-3	Naphthalene	5	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix: (soil/water) WATER Lab Sample ID: 90103003

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7825

Level: (low/med) LOW Date Received: 01/25/02

% Moisture: not dec. _____ Date Analyzed: 01/30/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix: (soil/water) WATER Lab Sample ID: 90103004

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7826

Level: (low/med) LOW Date Received: 01/25/02

% Moisture: not dec. _____ Date Analyzed: 01/30/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	3	
1330-20-7	Xylene (Total)	2	
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

V2ALCS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix: (soil/water) WATER Lab Sample ID: V2L0126A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7774

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	46	
71-43-2	Benzene	47	
108-88-3	Toluene	48	
100-41-4	Ethylbenzene	47	
1330-20-7	Xylene (Total)	150	
91-20-3	Naphthalene	42	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix: (soil/water) WATER Lab Sample ID: V2B0126A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7773

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix: (soil/water) WATER Lab Sample ID: V2B0130A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7823

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 01/30/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK2A	90	82	97	104	0
02	V2ALCS	99	98	95	105	0
03	SP-1	89	82	101	108	0
04	SP-2	91	82	99	110	0
05	VBLK2D	100	93	102	93	0
06	SP-3	99	92	103	94	0
07	SP-4	102	92	109	96	0
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(79-122)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(76-121)
SMC3 (TOL)	= Toluene-d8	(82-118)
OTHER(BFB)	= Bromofluorobenzene	(85-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix Spike - Sample No.: V2ALCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Methyl tert-butyl ether	50		46	92	62-136
Benzene	50		47	94	78-121
Toluene	50		48	96	77-122
Ethylbenzene	50		47	94	76-120
Xylene (Total)	150		150	100	76-121
Naphthalene	50		42	84	52-137

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 6 outside limits

COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK2A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Lab File ID: V2E7773 Lab Sample ID: V2B0126A

Date Analyzed: 01/26/02 Time Analyzed: 1051

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: V2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V2ALCS	V2L0126A	V2E7774	1210
02	SP-1	90103001	V2E7787	2008
03	SP-2	90103002	V2E7788	2036
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

FORM IV VOA

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Lab File ID: V2E7823 Lab Sample ID: V2B0130A

Date Analyzed: 01/30/02 Time Analyzed: 1047

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: V2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	SP-3	90103003	V2E7825	1215
02	SP-4	90103004	V2E7826	1242
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

FORM IV VOA

* Metals *

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-1

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90103___

Matrix (soil/water): WATER_ Lab Sample ID: T90103001_____

Level (low/med): MED____ Date Received: 01/25/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	3720		E	P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-1

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix (soil/water): WATER Lab Sample ID: D90103001

Level (low/med): MED Date Received: 01/25/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	68.0	B	E	P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DISSOLVED_METALS_FOR_SAMPLE_SP-1

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-2

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90103___

Matrix (soil/water): WATER_ Lab Sample ID: T90103002_____

Level (low/med): MED____ Date Received: 01/25/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	7590		E	P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-2

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix (soil/water): WATER Lab Sample ID: D90103002

Level (low/med): MED Date Received: 01/25/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	126	B	E	P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DISSOLVED_METALS_FOR_SAMPLE_SP-2

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-3

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90103___

Matrix (soil/water): WATER_ Lab Sample ID: T90103003_____

Level (low/med): MED____ Date Received: 01/25/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	1060		E	P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-3

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90103___

Matrix (soil/water): WATER_ Lab Sample ID: D90103003_____

Level (low/med): MED____ Date Received: 01/25/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	25.0	U	E	P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_FOR_SAMPLE_SP-3_____

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-4

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90103

Matrix (soil/water): WATER Lab Sample ID: T90103004

Level (low/med): MED Date Received: 01/25/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	5350		E	P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SP-4

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90103___

Matrix (soil/water): WATER_ Lab Sample ID: D90103004_____

Level (low/med): MED____ Date Received: 01/25/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	1810		E	P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_FOR_SAMPLE_SP-4

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90103___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron	25.0	U	25.0	U	25.0	U	25.0	U	132.502	B	P
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: 90103___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron			25.0	U					45.101	B	P
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

7

LABORATORY CONTROL SAMPLE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90103___

Solid LCS Source: _____

Aqueous LCS Source: HIGH_PURITY_

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron	4550.0	4293.5	94.4						
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

9
ICP SERIAL DILUTIONS

EPA SAMPLE NO.

SP-4L

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90103___

Matrix (soil/water): WATER_ Level (low/med): MED____

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							NR
Antimony							NR
Arsenic							NR
Barium							NR
Beryllium							NR
Cadmium							NR
Calcium							NR
Chromium							NR
Cobalt							NR
Copper							NR
Iron	1814.94		2007.10		10.6	E	P
Lead							NR
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium							NR
Selenium							NR
Silver							NR
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR

MITKEM CORPORATION

* Wet Chemistry *

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: SP-1
Lab ID: 90103001

Matrix: Aqueous

Analyte	Results	Reporting	Units	Analysis Method	Analysis Date
Free CO2	19	10	mg/L	SM 4500-CO2C	1/25/02
Nitrate/Nitrate-N	0.16	0.05	mg/L	EPA 353.2	1/25/02
Sulfates	46	7	mg/L	SM 4500-SO4 E	1/25/02
TOC	17	6	mg/L	EPA 415.1	1/26/02

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: SP-2
Lab ID: 90103002

Matrix: Aqueous

Analyte	Results	Reporting	Units	Analysis Method	Analysis Date
Free CO2	42	10	mg/L	SM 4500-CO2C	1/25/02
Nitrate/Nitrate-N	0.10	0.05	mg/L	EPA 353.2	1/25/02
Sulfates	64	7	mg/L	SM 4500-SO4 E	1/25/02
TOC	29	6	mg/L	EPA 415.1	1/26/02

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: SP-3
Lab ID: 90103003

Matrix: Aqueous

Analyte	Results	Reporting	Units	Analysis Method	Analysis Date
Free CO2	11	10	mg/L	SM 4500-CO2C	1/25/02
Nitrate/Nitrate-N	0.10	0.05	mg/L	EPA 353.2	1/25/02
Sulfates	16	7	mg/L	SM 4500-SO4 E	1/25/02
TOC	18	6	mg/L	EPA 415.1	1/26/02

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: SP-4
Lab ID: 90103004

Matrix: Aqueous

Analyte	Results	Reporting		Units	Analysis Method	Analysis Date
Free CO2	24	10		mg/L	SM 4500-CO2C	1/25/02
Nitrate/Nitrate-N	ND	5	*	mg/L	EPA 353.2	1/25/02
Sulfates	22	7		mg/L	SM 4500-SO4 E	1/25/02
TOC	24	6		mg/L	EPA 415.1	1/26/02

ND = Not Detected

*Elevated due to sample matrix effects.

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng. Matrix: Aqueous
Client ID:
Lab ID: Method Blank

Analyte	Results	Reporting	Units	Analysis Method	Analysis Date
Free CO2	ND	10	mg/L	SM 4500-CO2C	1/25/02
Nitrate/Nitrate-N	ND	0.05	mg/L	EPA 353.2	1/25/02
Sulfates	ND	7	mg/L	SM 4500-SO4 E	1/25/02
TOC	ND	6	mg/L	EPA 415.1	1/26/02

ND = Not Detected

90103-MB

0038

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng. Matrix: Aqueous
Client ID:
Lab ID: Lab Control Sample

Analyte	% Recovery	Analysis Method	Analysis Date
Free CO2	105	SM 4500-CO2C	1/25/02
Nitrate/Nitrate-N	95	EPA 353.2	1/25/02
Sulfates	100	SM 4500-SO4 E	1/25/02
TOC	88	EPA 415.1	1/26/02

90103-LCS

Last Page of Data Report

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

February 22, 2002

LMS Engineering
One Blue Hill Plaza, PO Box 150
Pearl River, NY 10965
Attn: Ms. Maria Heincz

RE: Client Project: Harrison Spill Site, 446-311
Mitkem Lab Project # 90091

Dear Ms. Heincz:

Enclosed please find the data report of the required analysis for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business

Sincerely,

Agnes R. Ng
CLP Project Manager

Environmental Chemistry Section

FEB 27 2002

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • email: mitkem@mitkem.com

Mitkem Corporation

New York State Department of Environmental Conservation
Sample Identification and Analytical Requirements Summary

Project Name: Harrison Spill Site 446-311 SDG: 90091

Customer Sample Code	Laboratory Sample Code	Analytical Requirements				
		VOA GC/MS Method #	BNA GC/MS Method #	Pest PCBs Method #	Metals	Other
						Wet Chem
MW-1	90091001	8260B			6010B	see data
MW-2	002					
MW-3	003					
MW-4	004					
MW-5	005					
MW-6	006					
MW-7	007					
MW-8	008					
MW-9	009					
TRIPBLANK	010					

NYASP 10/95

Mitkem Corporation

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary
Volatile (VOA) Analyses

Project Name: Harrison Spill Site 446-311 SDG: 90091

Laboratory Sample ID	Matrix	Date Collected	Date Received at Lab	Date Extracted	Date Analyzed
90091001	AQ	1/23/02	1/24/02	NA	1/26/02
002					
003					
004					
005					
006					
007					
008					
009					
010					

NYASP 10/95

Mitkem Corporation

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary
Volatile (VOA) Analyses

Project Name: Harrison Spill Site 446-311 SDG: 90091

Laboratory Sample ID	Matrix	Analytical Protocol	Extraction Method	Low/Med. Level	Dil./Conc. Factor
90091001	AQ	8260B	NA	Low	1
002	↓	↓	↓	↓	↓
003					
004					
005					
006					
007					
008					
009					
010					

NYASP 10/95

Mitkem Corporation

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary
Inorganic Analyses

Project Name: Harrison Spill Site 446-311 SDG: 90091

Laboratory Sample ID	Matrix	Metals Requested	Date Received at Lab	Date Analyzed
90091001	AQ	6010B	1/24/02	1/25/02 - 1/26/02
002	"	"	"	"
003	"	"	"	"
004	"	"	"	"
005	"	"	"	"
006	"	"	"	"
007	"	"	"	"
008	"	"	"	"
009	"	"	"	"

NYASP 10/95

Analytical Data Package for LMS Engineers

Client Project: Harrison Spill Site, 446-311

SDG# 90091

Mitkem Project ID: 90091

February 22, 2002

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to LMS Engineers' Harrison Spill Site project number 446-311. Under this deliverable, analysis results are presented for ten aqueous samples that were received on January 4 2002 and assigned Laboratory Number 90091. Analyses were performed per specifications in the project's contract and the chain of custody forms.

The following samples are submitted in this data package:

Client ID	Lab ID	Analysis
MW-1	90091001	V, M. DM, N, F, S, T
MW-2	90091002	V, M. DM, N, F, S, T
MW-3	90091003	V, M. DM, N, F, S, T
MW-4	90091004	V, M. DM, N, F, S, T
MW-5	90091005	V, M. DM, N, F, S, T
MW-6	90091006	V, M. DM, N, F, S, T
MW-7	90091007	V, M. DM, N, F, S, T
MW-8	90091008	V, M. DM, N, F, S, T
MW-9	90091009	V, M. DM, N, F, S, T
TRIPBLANK	90091010	V

V = Volatile Organics – NYSDEC ASP Method 8260B
M = Iron – NYSDEC ASP Method 6010B
DM = Dissolved Iron – NYSDEC ASP Method 6010B
N = Nitrate – EPA 353.2
F = Free CO2 – SM 4500-CO2 C
S = Sulfates – SM 4500-SO4 E
T = Total Organic Carbon – EPA 415.1

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category A deliverable with the exception of nitrate, free CO2, sulfates and total organic carbon. Nitrate, free CO2, sulfates and total organic carbon are reported in the standard Mitkem format.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required.

2. Volatile Organic Analysis:

Sample results are reported to a nominal 1ppb level. These reporting limits are below the lowest initial calibration standard, but above laboratory method detection limits.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analyses.

3. Metals Analysis:

The metals analysis includes results for both total and dissolved iron. The total iron analysis has the letter "T" preceding the laboratory identification number and the dissolved iron analysis has the letter "D" preceding the laboratory identification number.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analyses.

4. Wet Chemistry Analysis:

The reporting limit for nitrate in several samples was elevated due to sample matrix interference. This analysis involves the generation of a color, which is proportional to the concentration of the analyte in the sample. Without dilution, the color of the sample obscured the color change in the analysis.

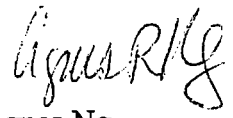
For the free carbon dioxide analysis, sample MW-9 turned pink upon addition of the indicator. The analyst proceeded with a 20x dilution and 100x dilution with similar results. The sample was able to be titrated at 200x dilution.

No other unusual observation was made for the analyses.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.



Agnes Ng
CLP Project Manager
02/22/02

Sample Transmittal Documentation

COMPANY [redacted]	[redacted]	COMPANY [redacted]	PHONE [redacted]
NAME MARIA HEINCZ	FAX (845) 735-7466	NAME	FAX
ADDRESS ONE BLUE HILL PLAZA		ADDRESS	TURNAROUND TIME:
CITY/ST/ZIP PEARL RIVER N.Y. 10950		CITY/ST/ZIP	

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
HARRISON SPILL SITE	446-311	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	VOCs	TOTAL Fe	DISS. Fe *	NO2/NO3	SO4	TOC	CO2	COMMENTS
	TMS 1520															
MW-1	1/23/02 ~~1545~~		✓	✓			90090-01	9	3	1	1	1	1	1	1	
MW-2	1540						-02									
MW-3	1600						-03									ODOR
MW-4	1615						-04									
MW-5	1625						-05									
MW-6	1700						-06									ODOR
MW-7	1645						-07									
MW-8	1715						-08									
MW-9	1725						-09									
Trip Blank	1200						-10									
	/															
	/															

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
1	L. DeSnider	1/23/02	[signature]	1/24/02 / 0900
2		/		/
3		/		/

ADDITIONAL REMARKS:
* To be preserved & filtered in Lab
# added Trip Blank to the COC

COOLER TEMP: 6°C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

Lab ID	Client ID	Matrix	Type	Analysis Code	Collected	Received	Due	Notes
90091009	MW-9	W	SAMPLE	8260W S4500EWSO4 S4500WFCO2				
90091010	TRIPBLANK	W	B-TB	8260W	01/23/02 17:25	01/24/02	02/07/02	
90091011	MW-1	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 15:20	01/24/02	02/07/02	DISS FE
90091012	MW-2	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 15:40	01/24/02	02/07/02	DISS FE
90091013	MW-3	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 16:00	01/24/02	02/07/02	DISS FE
90091014	MW-4	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 16:15	01/24/02	02/07/02	DISS FE
90091015	MW-5	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 16:25	01/24/02	02/07/02	DISS FE
90091016	MW-6	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 17:00	01/24/02	02/07/02	DISS FE
90091017	MW-7	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 16:45	01/24/02	02/07/02	DISS FE
90091018	MW-8	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 17:15	01/24/02	02/07/02	DISS FE
90091019	MW-9	W	SAMPLE	6010W Fe 6010W PREP	01/23/02 17:25	01/24/02	02/07/02	DISS FE

INVOICE AND REPORT GO TO:

Maria Heincz
Lawler, Matusky & Skelly Eng.
One Blue Hill Plz, PO Box 150
Pearl River, NY, 10965
E-Mail: mheincz@lmseng.com
W : 845-735-8300
F : 845-735-7466

0008

MITKEM CORPORATION

Sample Condition Form

Page__of_ 90091

Received By: SK	Reviewed By:	Date: 1/24/02	MITKEM Project: 9009C
Client Project: Harrison Spill Site	Client: WMS		PM-1-24-02

Condition:		Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaO	VOA Matrix	Comments/Remarks/ Corrective Action*
1) Custody Seal(s)	Present/Absent	9009C-01	<2	<2	no chlor	—	UA/H	
	Cooler's/Bottles	90091 PM 1-24 -02						
	Intact/Broken	-03						
2) Custody Seal Number(s)	/	-04						
		-05						
3) Chain-of-Custody	Present/Absent	-06						
4) Cooler Temperature	6°C	-07						
Coolant Condition	ice	-08						
5) Airbill(s)	Present/Absent	-09						
Airbill Number(s)	8257 4014 2979	-010					UA	
	8257 4014 2980							
6) Sample Bottles	Intact							
	Broken							
	Leaking							
7) Date Received	1/24/02							
8) Time Received	0900							

VOA Matrix Key:

US=Unpreserved Soil	M-=MeOH
UA=Unpreserved Aqueous	E=Encore
M/N=MeOH & NaHSO4	H=HCl
N=NaHSO4	A=Air

* See Sample Condition Notification/Corrective Action Form yes / no

MITKEM CORPORATION

* Volatiles *

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

V2ALCS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: V2L0126A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7774

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	46	
71-43-2	Benzene	47	
108-88-3	Toluene	48	
100-41-4	Ethylbenzene	47	
1330-20-7	Xylene (Total)	150	
91-20-3	Naphthalene	42	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: V2B0126A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7773

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK2A	90	82	97	104	0
02	V2ALCS	99	98	95	105	0
03	MW-1	89	86	95	105	0
04	MW-2	87	85	101	108	0
05	MW-3	82	79	107	109	0
06	MW-4	89	81	96	108	0
07	MW-5	90	82	102	106	0
08	MW-6	88	82	102	110	0
09	MW-7	89	82	102	111	0
10	MW-8	89	83	102	113	0
11	MW-9	90	83	96	107	0
12	TRIPBLANK	90	84	96	106	0
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(79-122)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(76-121)
SMC3 (TOL)	= Toluene-d8	(82-118)
OTHER(BFB)	= Bromofluorobenzene	(85-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix Spike - Sample No.: V2ALCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Methyl tert-butyl ether	50		46	92	62-136
Benzene	50		47	94	78-121
Toluene	50		48	96	77-122
Ethylbenzene	50		47	94	76-120
Xylene (Total)	150		150	100	76-121
Naphthalene	50		42	84	52-137

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 6 outside limits

COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK2A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Lab File ID: V2E7773 Lab Sample ID: V2B0126A

Date Analyzed: 01/26/02 Time Analyzed: 1051

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: V2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V2ALCS	V2L0126A	V2E7774	1210
02	MW-1	90091001	V2E7777	1530
03	MW-2	90091002	V2E7778	1558
04	MW-3	90091003	V2E7779	1626
05	MW-4	90091004	V2E7780	1654
06	MW-5	90091005	V2E7781	1721
07	MW-6	90091006	V2E7782	1749
08	MW-7	90091007	V2E7783	1817
09	MW-8	90091008	V2E7784	1845
10	MW-9	90091009	V2E7785	1912
11	TRIPBLANK	90091010	V2E7786	1940
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

MITKEM CORPORATION

* Metals *

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091001

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7777

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091002

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7778

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091003

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7779

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	3	
108-88-3	Toluene	3	
100-41-4	Ethylbenzene	40	
1330-20-7	Xylene (Total)	110	
91-20-3	Naphthalene	28	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091004

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7780

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091005

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7781

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	4	
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091006

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7782

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	3	
1330-20-7	Xylene (Total)	27	
91-20-3	Naphthalene	19	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091007

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7783

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091008

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7784

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	7	
91-20-3	Naphthalene	4	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-9

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091009

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7785

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix: (soil/water) WATER Lab Sample ID: 90091010

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2E7786

Level: (low/med) LOW Date Received: 01/24/02

% Moisture: not dec. _____ Date Analyzed: 01/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	Methyl tert-butyl ether	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylene (Total)	1	U
91-20-3	Naphthalene	1	U

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: T90091001

Level (low/med): MED Date Received: 01/24/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	3760			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: D90091001

Level (low/med): MED Date Received: 01/24/02

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	298			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_FOR_MW-1

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-2

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: T90091002

Level (low/med): MED Date Received: 01/24/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	75600			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-2

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: D90091002

Level (low/med): MED Date Received: 01/24/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	4240			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DISSOLVED_METALS_FOR_MW-2

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091___

Matrix (soil/water): WATER_ Lab Sample ID: T90091003_____

Level (low/med): MED____ Date Received: 01/24/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	35100			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3

Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: D90091003

Level (low/med): MED Date Received: 01/24/02

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	4000			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_FOR_MW-3

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-4

Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: T90091004

Level (low/med): MED Date Received: 01/24/02

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	1330			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-4

Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: D90091004

Level (low/med): MED Date Received: 01/24/02

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	25.0	U		P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_FOR_MW-4

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-5

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091___

Matrix (soil/water): WATER_ Lab Sample ID: T90091005_____

Level (low/med): MED____ Date Received: 01/24/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	3910			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-5

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091___

Matrix (soil/water): WATER_ Lab Sample ID: D90091005_____

Level (low/med): MED____ Date Received: 01/24/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	1820			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_FOR_MW-5_____

FORM I - IN SW846

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: T90091006

Level (low/med): MED Date Received: 01/24/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	2410			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6

Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: D90091006

Level (low/med): MED Date Received: 01/24/02

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	2060			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_FOR_MW-6

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-7

Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: T90091007

Level (low/med): MED Date Received: 01/24/02

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	30000			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-7

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: D90091007

Level (low/med): MED Date Received: 01/24/02

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	4020			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_FOR_MW-7

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8

Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091___

Matrix (soil/water): WATER_ Lab Sample ID: T90091008_____

Level (low/med): MED____ Date Received: 01/24/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	4370			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: D90091008

Level (low/med): MED Date Received: 01/24/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	48.7	B		P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DISSOLVED_METALS_MW-8

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-9

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: 90091

Matrix (soil/water): WATER Lab Sample ID: T90091009

Level (low/med): MED Date Received: 01/24/02

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	7870			P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-9

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091___

Matrix (soil/water): WATER_ Lab Sample ID: D90091009_____

Level (low/med): MED____ Date Received: 01/24/02____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	25.0	U		P
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

DISSOLVED_METALS_MW-9_____

FORM I - IN SW846

3
BLANKS

Name: MITKEM_CORPORATION Contract: ____

Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: 90091___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron	25.0	U	25.0	U	25.0	U	25.0	U	86.700	B	P
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: 90091___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron			25.0	U	25.0	U			25.000	U	P
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: 90091___

Preparation Blank Matrix (soil/water): ____

Preparation Blank Concentration Units (ug/L or mg/kg): ____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron	-47.9	B	-62.5	B	-44.8	B					P
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

7

LABORATORY CONTROL SAMPLE

Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091___

Solid LCS Source: _____

Aqueous LCS Source: HIGH_PURITY_

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron	4550.0	4564.2	100.3						
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

9
ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MW-1

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: 90091___

Matrix (soil/water): WATER_ Level (low/med): MED___

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							NR
Antimony							NR
Arsenic							NR
Barium							NR
Beryllium							NR
Cadmium							NR
Calcium							NR
Chromium							NR
Cobalt							NR
Copper							NR
Iron	3760.20		3844.51		2.2		P
Lead							NR
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium							NR
Selenium							NR
Silver							NR
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR

MITKEM CORPORATION

* Wet Chemistry *

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-1
Lab ID: 90091001

Matrix: Aqueous

Analyte	Results	Reporting Limit	Units	Analysis Method	Analysis Date
Free CO2	42	10	mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	3.0	0.05	mg/L	EPA 353.2	1/26/02
Sulfates	17	7	mg/L	SM 4500-SO4 E	1/24/02
TOC	8	6	mg/L	EPA 415.1	1/26/02

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-2
Lab ID: 90091002

Matrix: Aqueous

Analyte	Results	Reporting Limit		Units	Analysis Method	Analysis Date
Free CO2	40	10		mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	ND	5	*	mg/L	EPA 353.2	1/26/02
Sulfates	150	7		mg/L	SM 4500-SO4 E	1/24/02
TOC	18	6		mg/L	EPA 415.1	1/26/02

ND = Not Detected

*Elevated due to sample matrix effects

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-3
Lab ID: 90091003

Matrix: Aqueous

Analyte	Results	Reporting Limit		Units	Analysis Method	Analysis Date
Free CO2	70	10		mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	ND	5	*	mg/L	EPA 353.2	1/26/02
Sulfates	24	7		mg/L	SM 4500-SO4 E	1/24/02
TOC	70	6		mg/L	EPA 415.1	1/26/02

ND = Not Detected

*Elevated due to sample matrix effects

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-4
Lab ID: 90091004

Matrix: Aqueous

Analyte	Results	Reporting Limit	Units	Analysis Method	Analysis Date
Free CO2	40	10	mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	3.2	0.05	mg/L	EPA 353.2	1/26/02
Sulfates	22	7	mg/L	SM 4500-SO4 E	1/24/02
TOC	13	6	mg/L	EPA 415.1	1/26/02

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-5
Lab ID: 90091005

Matrix: Aqueous

Analyte	Results	Reporting Limit	Units	Analysis Method	Analysis Date
Free CO2	12	10	mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	0.62	0.05	mg/L	EPA 353.2	1/26/02
Sulfates	12	7	mg/L	SM 4500-SO4 E	1/24/02
TOC	14	6	mg/L	EPA 415.1	1/26/02

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-6
Lab ID: 90091006

Matrix: Aqueous

Analyte	Results	Reporting Limit		Units	Analysis Method	Analysis Date
Free CO2	32	10		mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	ND	5	*	mg/L	EPA 353.2	1/26/02
Sulfates	19	7		mg/L	SM 4500-SO4 E	1/24/02
TOC	25	6		mg/L	EPA 415.1	1/26/02

ND = Not Detected

*Elevated due to sample matrix effects

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-7
Lab ID: 90091007

Matrix: Aqueous

Analyte	Results	Reporting Limit		Units	Analysis Method	Analysis Date
Free CO2	35	10		mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	ND	5	*	mg/L	EPA 353.2	1/26/02
Sulfates	38	7		mg/L	SM 4500-SO4 E	1/24/02
TOC	21	6		mg/L	EPA 415.1	1/26/02

ND=Not Detected

*Elevated due to sample matrix effects

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-8
Lab ID: 90091008

Matrix: Aqueous

Analyte	Results	Reporting Limit		Units	Analysis Method	Analysis Date
Free CO2	22	10		mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	ND	5	*	mg/L	EPA 353.2	1/26/02
Sulfates	ND	7		mg/L	SM 4500-SO4 E	1/24/02
TOC	25	6		mg/L	EPA 415.1	1/26/02

ND = Not Detected

*Elevated due to sample matrix effects.

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng.
Client ID: MW-9
Lab ID: 90091009

Matrix: Aqueous

Analyte	Results	Reporting Limit		Units	Analysis Method	Analysis Date
Free CO2	ND	200	*	mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	0.69	0.05		mg/L	EPA 353.2	1/26/02
Sulfates	23	7		mg/L	SM 4500-SO4 E	1/24/02
TOC	15	6		mg/L	EPA 415.1	1/26/02

ND = Not Detected

*Elevated due to sample matrix effects

0058

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng. Matrix: Aqueous
Client ID:
Lab ID: Method Blank

Analyte	Results	Reporting Limit	Units	Analysis Method	Analysis Date
Free CO2	ND	10	mg/L	SM 4500-CO2C	1/24/02
Nitrate/Nitrite-N	ND	0.05	mg/L	EPA 353.2	1/26/02
Sulfates	ND	7	mg/L	SM 4500-SO4 E	1/24/02
TOC	ND	6	mg/L	EPA 415.1	1/26/02

ND = Not Detected

90091-MB

MITKEM CORPORATION

Analysis Report: Wet Chemistry Parameters

Client: Lawler, Matusky, & Skelly Eng. Matrix: Aqueous
Client ID:
Lab ID: Lab Control Sample

Analyte	% Recovery	Analysis Method	Analysis Date
Free C02	95	SM 4500-CO2C	1/26/02
Nitrate/Nitrite-N	103	EPA 353.2	1/24/02
Sulfates	88	SM 4500-SO4 E	1/26/02
TOC	96	EPA 415.1	1/24/02

Last Page of Data Report