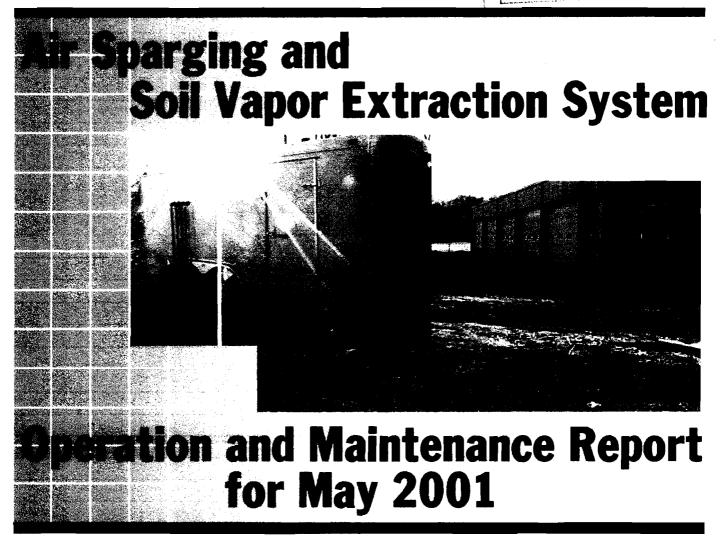
NEW YORK STATE DEPARTMENT OF TRANSPORTATION Albany, New York

Harrison Subresidency Town of Harrison Westchester County, New York D008873 PIN 8807.31.301



June 2001



LAWLER, MATUSKY & SKELLY ENGINEERS LLP

Environmental Science & Engineering Consultants One Blue Hill Plaza • Pearl River, New York 10965

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CHAPTER 1

SUMMARY OF PERFORMANCE MONITORING SECOND QUARTER (MAY 2001)

1.1 OBJECTIVE

The second quarter sampling was conducted on May 24 and 25, 2001. The objectives of this sampling event were:

- to assess the remediation efforts thus far;
- 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 assess the need for additional air sparge wells;
- to qualitatively assess the level of biodegradation present;
- to assess the effects of rebounding.

1.2 SAMPLING PLAN

Monitoring wells 1 through 9, sparge wells SP-1 through 4 and PC-1 were sampled and analyzed for benzene, toluene, ethyl-benzene, xylenes (BTEX), methyl tert-butyl ether (MTBE), naphthalene and 2 methylnapthene in addition to standard water chemistry parameters (to assess the extent of biodegradation).

As part of previous investigations at this site, the septic tank was opened, inspected, and sampled. The septic tank wastewater contained 510 ug/L of trichloroethylene (TCE) and 2,700 ug/L of tetrachloroethylene (PCE). The NYSDOT requested that LMS arrange for the removal and disposal of the tank contents; the septic tank was pumped out on 30 January 2001 and contents disposed. In addition to the performance sampling of the remediation system, two additional groundwater samples were collected in the vicinity of the leachfield to determine if PCE and/or TCE impact the area. Table 1-1 shows the sampling matrix.

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TABLE 1-1

Harrison Subresidency Spill Site Harrison, New York Compliance Sampling and Leachfield Groundwater Sampling

Parameter	Matrix	Container	Analytical Method	Preservative	Holding Time	Number of samples	Remarks
BTEX MTBE Naphthalene 2-Methylnaphthalene	Aqueous	3, 40 ml glass vials with teflon caps and septa	USEPA 8260B	cool 4 C	7 days	15	
TCL VOCs MTBE PCE TCE	Aqueous	3, 40 ml glass vials with teflon caps and septa	USEPA 8260B	cool 4 C	7 days	2	leachfield sampling methods
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	H2SO₄ to pH<2, cool to 4 C	28 days	15	
Sulfate	Aqueous	500 mL polyethylene	USEPA 9056	cool 4 C	28 days	15	
тос	Aqueous	2, 40 mL glass vials with teflon caps and septa	USEPA 415.1	HCI to pH<2, cool to 4 C	28 days	15	
CO2	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	2	*Prepared by Mitkem

1.3 SAMPLING METHODS

The air sparge system was shutdown approximately 4 weeks in advance of this second quarter sampling event, the soil vapor extraction system was shutdown 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 sample collection. Purging was performed 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, 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 A. Dissolved oxygen was measured in the field and was recorded during sample collection. The meter was decontaminated and re-calibrated between samples.

The two leachfield groundwater samples were collected via a truck-mounted probe utilizing a direct push hydraulic hammer system. The direct-push probe was advanced to refusal depth for both samples. Groundwater samples were collected by installing a temporary piezometer of 2-inch screened PVC into the borehole. The piezometers were then purged and sampled using a dedicated polyethylene bailer. Sampling was performed after the groundwater in the piezometers recovered to the appropriate level. Following sampling, the piezometers were removed and the boreholes backfilled with bentonite.

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 June 8, 2001 via fax.

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TABLE 1-2 STATIC WATER LEVEL & DEPTH TO BOTTOM MEASUREMENTS Harrison Subresidency 5/24/2001

Well ID	DTW (May 2001)	DTW (Jan 2001)	DTW (May 2000)	DTW (March 1999)	DTW (MAY 1997)	DTW (Nov 1995)	DTB
PC-1	6.55	4.58	5.22	3.95	NA	NA	6.87
SP-1	4.46	7.25	12,86	2.70	3.04	NA	19.18
SP-1B	4.83	NA	4.58	2.64	NA	NA	26.77
SP-2	6.87	NA	9.00	5.82	5.94	NA	18.48
SP-3	6.78	NA	6.89	6.00	NA	NA	19.95
SP-4	4.40	NA	17.42	3.54	NA	NA	20.90
MW-1	3.37	2.87	2.78	1.23	1.70	2.92	8.58
MW-2	4.89	4.57	3.86	2.44	NA	4.53	10.79
MW-3	4.88	4.70	4.18	2.91	3.08	4.94	10.75
MW-4	4.95	4.73	4.31	3.30	NA	4.82	11.62
MW-5	5.10	4.89	4.87	3.68	NA	5.26	11.00
MW-6	5.20	5.26	4.95	4.20	NA	5.43	14.77
MW-7	4.56	3.90	3.60	2.32	2.67	4.47	14.67
MW-8	6.87	7.36	6.86	5.98	6.40	7.21	14.57
MW-9	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

1.4 SUMMARY OF ANALYTICAL RESULTS

The analytical data are summarized in Attachment A. In the past, there have been some anomalies in the MTBE data, which resulted in concentrations that were biased high due to 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 VOC analyses were previously analyzed using gas chromatography (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 methods. Subsequent review of the GC/MS results indicated that MTBE was detected in MW-8 at 2.86 ug/l and not detected in MW-3; the initial GC results indicated that MW-8 contained 68 ug/l and MW-3 had 50 ug/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 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 present in trace amounts only in the past sampling events; data collected in the second quarter confirms this. MTBE concentrations detected this quarter were virtually non-detectable, MW-7, SP-2 and SP-3 revealed MTBE at concentrations less than 20 ug/L.

Overall, second quarter results reveal that MTBE met the target effluent goal of 50 ug/L at all sampled locations.

MW-1 BTEX concentration was non-detectable. MW-1 is located upstream of the known plume area, first quarter sampling revealed MTBE at a concentration of 54 ug/L. As described above, this result is questionable; second quarter 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 ug/L and a first quarter concentration of 4 ug/L.

MW-3 is located in the center of the plume; historically the BTEX concentration was 960 ug/L and first quarter results showed BTEX at 2.0 ug/L. Some rebounding did take place in this well since the second quarter sampling revealed a BTEX concentration of 174 ug/L, most of which is xylene. Xylene is the most difficult compound of the BTEX group to remediate, so these results are not unexpected. In any case, 82% removal of BTEX was achieved in MW-3.

MW-4 BTEX concentration is 2 ug/L, the baseline concentration was 39.4 ug/L.

MW-5 is located in the center of the plume; historically the BTEX concentration was 916 ug/L and first quarter results showed BTEX at 45.0 ug/L. Some rebounding did take place in this well since the second quarter sampling revealed a BTEX concentration of 232 ug/L, most of which is xylene. Xylene is the most difficult compound of the BTEX group to remediate so these results are not unexpected. In any case, 75% removal of BTEX has achieved in MW-5.

MW-6 BTEX concentration was historically 224.9 ug/L. Second quarter sampling results reveal that the concentration was reduced to 6 ug/L, well below the target criteria of 50 ug/L.

MW-7 BTEX concentration was non-detectable, reduced from 17.9 ug/L.

MW-8 BTEX concentration was previously 396 ug/L, second quarter sampling reveals that the concentration is 36 ug/L, just under the 50 ug/L target limit. MW-8 also experienced rebounding, the first quarter sampling results showed non-detectable BTEX concentration.

MW-9 continues to show non-detectable BTEX levels.

PC-1 was not tested this quarter, the well was dry and representative sampling could not be performed.

SP-1 BTEX concentration was historically 31 ug/L, second quarter sampling results show non-detectable levels.

SP-2 is historically characterized by a BTEX concentration totaling 217 ug/L; second quarter results show non-detectable BTEX levels.

SP-3 previously measured a BTEX concentration of 586 ug/L; second quarter results reveal a concentration of 15 ug/L.

SP-4 BTEX concentration previously exceeded the 50 ug/L target with a concentration of 74.4 ug/L, second quarter results reveal non-detectable levels.

Table 1-3 summarizes the BTEX and MTBE data to date. Figure 1-1 shows the data graphically. As discussed, Attachment B presents a summary of all the analytical data for each monitoring point.

Naphthalene and 2-methylnapthalene were known to be present at this site, therefore, the sampling program was expanded to include these parameters. The results revealed that the concentrations of each were non-detectable (<10 ug/L) in all sampling locations. The target effluent goals for these constituents are 25 ug/L and 50 ug/L, respectively.

The groundwater samples collected from borings in the leach field area reveal that TCE and PCE were not present. The only constituent identified was MTBE at a concentration of 18 ug/L in LF TP-2. Attachment C includes the boring logs for these samples.

Attachment D presents the raw analytical data.

1.4.1 Biodegradation Considerations

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

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TABLE 1-3 MONITORING WELL DATA SUMMARY QUARTER 2 (MAY 2001) Harrison Subresidency

MONITORING	BASELINE	Quarter 1	Quarter 2	%
WELLS	(May 2000)	(Jan 2001)	(May 2001)	REMOVAL
<u>BTEX ug/L</u>				
MW-1	0	0	0	-
MW-2	17	4	0	100%
MW-3		2	4174	82%
MW-4	39	2	2	95%
MW-5	916 44	45	232	75%
MW-6	225	21	6	97%
MW-7	18	0	0	100%
MW-8	396	0	36	91%
MW-9	0	ND	0	-
PC-1	0	ND	NA	-
SP-1	31	0	0	100%
SP-1B	20	NA	0	100%
SP-2	217 de	NA	0	100%
SP-3	5:6	NA	15	97%
SP-4	75	NA	0	100%
	A COLUMN IN CONTACT AND CAREFUL TO A COLUMN TO A CO			
AVERAGE (w/ND's)	233	8	33	95%

AVERAGE (w/ND's)	233
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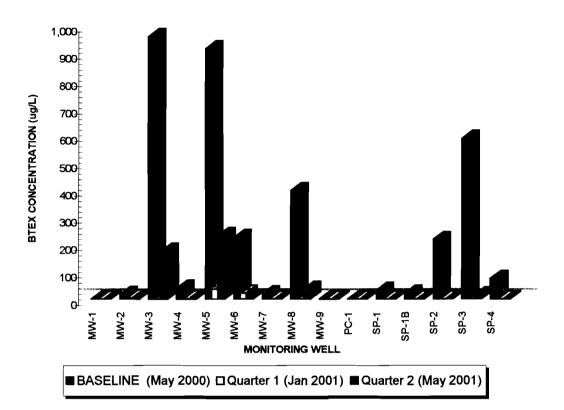
95%

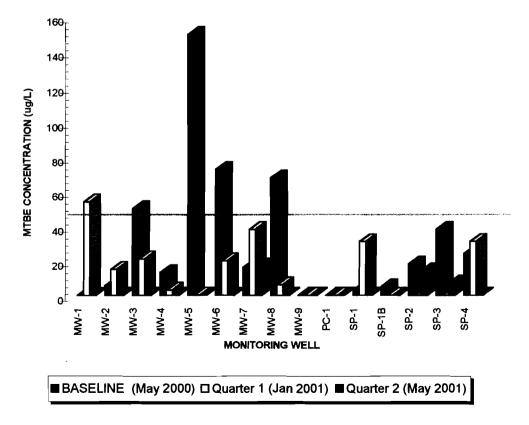
MONITORING	BASELINE	Quarter 1	Quarter 2	%
WELLS	(May 2000)	(Jan 2001)	(May 2001)	REMOVAL
MTBE (ug/L)				
MW-1	0		0	-
MW-2	6	15	0	100%
MW-3	50	21	n	100%
MW-4	13	3	0	100%
MW-5	150	0	0	100%
MW-6	162	20	0	100%
MW-7	16	38	17	-6%
MW-8	68	6	0	100%
MW-9	0	0	0	-
PC-1	0	0	NA	-
SP-1	3	31	0	100%
SP-1B	5	NA	0	100%
SP-2	18	NA	14	22%
SP-3	38	NA	7	82%
SP-4	24	31	0	100%
AVERAGE (w/ND's)	31	18	3	83%

Notes:

1. Bolded values exceed clean up goal of 50 ug/L.

FIGURE 1-1 GROUNDWATER MONITORING - SECOND QUARTER RESULTS (MAY 2001) Harrison Subresidency





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

- 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);

Total Organic Compound concentration (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.

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 particular electron acceptor is a function if its abundance and the surrounding environment's oxidation – reduction potential (ORP). Table 1-4 shows the ORP readings for each well. The ORP values measured in the field range from -0.05 volts to 0.01 volts. An ORP in the range of about -0.2 to 0.7 represents anaerobic conditions in which alternate electron acceptors like nitrates, carbon dioxide etc. are used in degradation. The ORP readings are in the published range for carbon dioxide reduction, which is typically about -0.1 to -0.3. This is also a common ORP range for iron reducing bacteria, which may also explain the general decrease in dissolved iron concentrations. An ORP greater than 0.7 volts suggests aerobic conditions. An increase in biodegradation by products such as carbon dioxide and methane is usually a good indicator of increased biological activity; however, carbon dioxide may act as electron donor under certain ORP conditions (<-0.25 volts).

At this site, it is likely that aerobic conditions exist at the filter packs and surrounding formation when the system is running and anaerobic conditions beyond the influence of

1-6

TABLE 1-4

OXIDATION-REDOX POTENTIAL (ORP) QUARTER 2 PERFORMANCE SAMPLING

HARRISON SUBRESIDENCY

Location	ORP (Volts)	General Electron Acceptor Trend
MW-1	0.10	$\mathbf{N} \uparrow \mathbf{S}$ no change $\mathbf{CO}_2 \downarrow \mathbf{TOC} \uparrow$
MW-2	-0.10	
MW-3	-0.11	N ND S \uparrow CO ₂ \downarrow TOC \uparrow
MW-4	0.03	_
MW-5	-0.13	-
MW-6	-0.13	-
MW-7	-0.07	-
MW-8	-0.02	$ N \downarrow S \uparrow CO_2 \downarrow TOC \uparrow$
MW-9	0.03	-
SP-1	-0.09	-
SP-1B	-0.03	-
SP-2	-0.03	-
SP-3	-0.05	-
SP-4	-0.05	-
DW-1	-	-

NOTES:

- = Not available

- ND = Not detected
- N = Nitrates
- S = Sulfates
- CO₂ = Carbon Dioxide
- TOC = Total Organic Carbon

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 significantly impact the biomass populations.

Dissolved oxygen (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 collection technique. As suggested above, the ORP indicates that the system was operating under anaerobic conditions when the samples were collected; this is logical since no oxygen was being introduced.

In general, the biodegradation data collected herein does not fully substantiate increased biodegradation nor does the data establish firm degradation trends. This is, in part, due to the lack of baseline data and the overall lack of general biodegradation data; only one or two data sets exist. Monitoring wells MW-1, MW-3 and MW-8 have baseline and second quarter biodegradation data and the following general trends were observed:

- TOC concentrations increased in all of the noted monitoring wells;
- Carbon dioxide concentrations decreased in all of the noted monitoring wells;
- Sulfate concentrations were generally higher;
- Nitrate concentrations were generally unchanged;
- Total and dissolved iron concentrations were generally lower in MW-1 and MW-8.

A marked increase in Total Organic Carbon (TOC) concentrations was observed. In general, the TOC concentrations in MW-1, MW-3 and MW-8 doubled between the baseline data and these second quarter data. This increase in TOC may be due to respired biomass, which would be the result of the system going from aerobic conditions (biomass reproduction) to suddenly anaerobic conditions when the system is shutdown (respiration). Respiration of the biomass may also explain the slight increase in sulfate concentrations observed in MW-3 and MW-8.

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. The respired biomass (ie. TOC) may serve as a food source when the system is re-started, at least for a short while.

1.5 **DISCUSSION**

The first quarter samples were collected 2 - 4 days after the system was shutdown. It is very important to allow sufficient time to elapse between air sparge system shutdowns and confirmation sampling using conventional groundwater monitoring wells. To properly assess rebounding effects, a waiting period of 4 to 48 weeks may be required before confirmatory sampling can be conducted. For this reason, the second quarter samples were collected 4 weeks after system shutdown.

The second quarter results show that only two samples exceeded the target effluent goals. However, the data shows some rebounding did occur in MW-3 and MW-5. BTEX concentrations of 174 ug/L and 232 ug/L were recorded, respectively. First quarter BTEX results for MW-3 and MW-5 were 2 ug/L and 45 ug/L, respectively.

The second quarter results were then compared to the first quarter results (January 2001) and the baseline data collected in May 2000. The baseline sampling data revealed that seven (7) wells exceeded the BTEX effluent goal of 50 ug/L and three (3) wells exceeded the MTBE effluent goal of 50 ug/L. The first quarter results from January 2001 generally showed significant reductions in BTEX and MTBE, with all but one sample meeting the target effluent criteria. Second quarter sampling reveals that virtually all sampled monitoring wells show an 80% - 100% reduction in BTEX concentrations.

Second quarter sampling also revealed that MTBE concentrations were generally nondetect or less than the target concentration of 50 ug/L. MTBE was analyzed using a mass spectrometry method during the second quarter sampling event. This suggests that the previous MTBE data analyzed using gas chromatograph methods may be questionable.

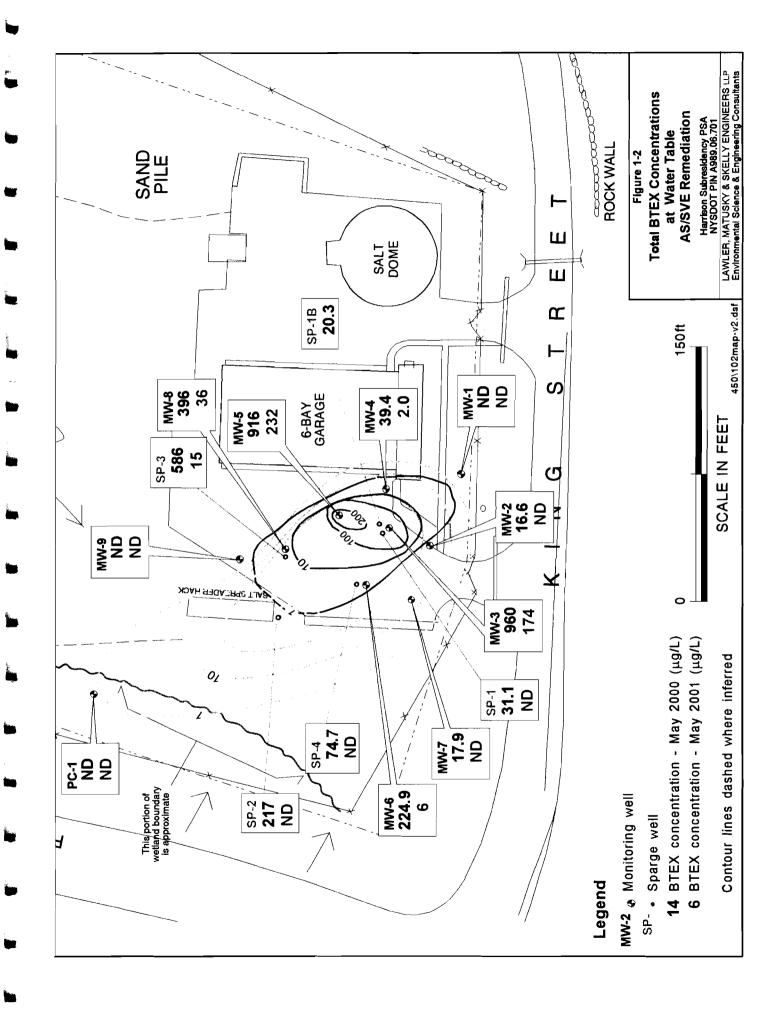
Naphthalene and 2-methylnapthalene and were also analyzed for during the second quarter sampling event, neither compound was detected above the detection limit of 10 ug/L.

Figures 1-2 (BTEX plume) shows the contamination plume developed from the baseline data; the second quarter results are overlaid onto the plume maps. An isopeth map for MTBE was not prepared since MTBE met the effluent target at all monitoring points.

In general, the biodegradation data collected herein does not substantiate increased biodegradation nor does the data establish firm degradation trends. This is, in part, due to the lack of baseline data and the overall lack of general biodegradation data; only one or two data sets exist. Water chemistry data collected during the sampling reveals that the ORP readings are typically less than 0.0 volts suggesting anaerobic conditions. This may explain the significant decrease in carbon dioxide and dissolved iron as compared to the baseline data. Due to its abundance and based on the ORP readings, carbon dioxide may be serving as a predominant electron acceptor at this site. However, the system is probably operating aerobically when the air sparge is on and then goes anaerobic when the sparge system is turned off. This phenomenon may explain the marked increase in TOC concentrations, with biomass thriving during the aerobic conditions and then respiring during anaerobic conditons.

1.6 FINDINGS AND CONCLUSIONS

- The results thus far are very promising and demonstrate effective remediation throughout the plume area with no evidence of any off site migration, but some rebounding did take place in the center of plume (MW-3 and MW-5).
- There was some change in static water table elevation between the baseline sampling event and the second quarter sampling. In general, the static water table was approximately 6 inches to 12 inches lower in May 2001 when compared to May 2000. The depth to water measurements associated with SP-1 and SP-4 in May 2000 appear to be artificially low probably due to poor recharge in these wells. These data should be disregarded. Water table elevation during system operation has not been assessed. Table 1-4 shows the static water elevation data.
- No contamination was found in the leach field area; MTBE was detected in one sample at a concentration of 18 ug/L. No further action seems warranted in this area.



• Naphthalene and 2-methylnapthene were not detected in any of the sampling locations at concentrations greater than the detection limit of 10 ug/L.

1.7 **RECOMMENDATIONS**

- Continued operation of the system is warranted until September/October 2001. Thereafter, the system should be shutdown until at least December 2001 (8 weeks minimum) and third quarter sampling performed. If these results are as promising as the second quarter results, the system should remain off and the last round of sampling conducted in early spring 2002. Thereafter, the NYSDOT should petition New York State for site closure.
- The air sparge system is programmed to pulse the airflow into each of the three sparge points. The current programming pulses the wells daily with 16 hours of air flow and 8 hours off. The system should continue to operate with these settings. SP-3 may be programmed to run continuously if we continue to have trouble sustaining air flow in this well prior to a shutdown.
- At this point, there is no need to install additional sparging wells; this will be further assessed after the system is re-started.
- 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 system was shut down for the month of May due to performance sampling.

2.2 SYSTEM OPERATION

Table 2-2 summarizes the cumulative system run time since project inception; Figure 2-1 presents the operating calendar.

2.3 OPERATION REPORT

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

FIGURE 2-1 OPERATING CALENDAR

Harrison Subresidency

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	27	28	29	30		

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7	8	9	10	11	12		4	5	6	7	8	9	10	-4	5		6	7	8	9	10	8	9	10	11	12	13	
14	15	16	17	18	19		11	1 12	13	14	15	16	17	11	Ľ	2 1	3	14	15	16	17	15	16	17	18	19	20	
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															1-11	1												
		M	ay							June	•					J	uly						1	Augu	ist			
S	M	Т	W	Т	F	S	S	M	Т	W	Т	F	S	S	Ν	1 1	Г	W	т	F	S	S	М	Т	W	т	F	S
		1	2	3	4							1	2	1	2		3	4	5	6	7				1	2	3	4
6	7	8	9	10	11		3	4	5	6	7	8	9	8	9	1	0	11	12	13	14	5	6	7	8	9	10	11
13	14	15	16	17	18	19	10) 11	12	13	14	15	16	15	10	5 1	7	18	19	20	21	12	13	14	15	16	17	18
20	21	22	23	24	25	26	17	7 18	19	20	21	22	23	22	2	3 2	4	25	26	27	28	19	20	21	22	23	24	25
27	28	29	30	31			24	4 25	26	27	28	29	30	29	3	0 3	1					26	27	28	29	30	31	
	Sept								Octo						No	vem							De	cem				
S	M	т	W	т	F	S	S	Μ	т	W	т	F	S	S	N	1 7	Г	W	Т	F	S	S	М	Т	W	т	F	S
						1		1	2	3	4	5	6						1	2	3							1
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5		6	7	8	9	10	2	3	4	5	6	7	8
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	2 1	3	14	15	16	17	9	10	11	12	13	14	1
16	17	18	19	20	21	22	21	1 22	23	24	25	26	27	18	19	9 2	:0	21	22	23	24	16	17	18	19	20	21	22
23	24	25	26	27	28	29	28	3 29	30	31				25	20	6 2	7	28	29	30		23	24	25	26	27	28	29

Legend

Planned downtime; quarterly sampling or maintenance Unplanned downtime Up time

Planned or Unplanned AS system down time; SVE running

Unplanned downtime, warranty issues

Site Visits

TABLE 2-1 MONTHLY INSPECTION CHECK LIST

Lawler

Matusky [©] Skelly										
Engineers LLP Environmental Science & Engineering Consultanta										
Name: George Gattulio / Mike Pantliano		Velocity Meter	Model No	<u>).:</u>	Dwyer	471 Thermo-A	nemometer		_	
PID Model No.: H-Nu P101/001		Pressure Gaug	e Model	No.:	Magnahelic 0 to 0.250 WC					
			— —					<u> </u>		
	Weathe	r: 80F	Weath	Weather:		Weather:		er:	╃──	
		Fair								
	Date:	5/1/01 GG	Date:		Date:		Date:			
SVE hours /time		7 <u>2.7 @</u> 1000								
AS hours/time		2.7 (see note)								
Air Sparging Flow Rate (CFM)	vs						_		+	<u> </u>
			-					·		<u>+</u>
<u>SP-3</u>						+				<u>┽──</u> ──
<u>SP-4</u>		_						<u> </u>		
<u>SP-2</u>		ating		<u> </u>				L		L
Air Sparging Pressure (PSI)		Not Operating			+					
<u>SP-1</u>		Aot O			+					
<u></u>		-							┦──	
<u>SP-4</u>									╉───	
Air Sparging Blower Outlet	_								<u> </u>	
SVE Velocity (ft/min)								·		
	100	500	<u> </u>		_					<u> </u>
<u>VE-2</u>	100	2,500	I		ļ					
<u>VE-3</u>	100	3,800			↓			<u> </u>		
<u>VE-4</u>	100	7,800				<u> </u>		<u> </u>		
SVE Vacuum (in W.C.)										
<u>VE-1</u>		17					_			
VE-2		14			ļ					
VE-3		11.5	Ì						_	
VE-4		12.5								
SVE Blower Iniet		40								
		24		_						
Pressure Monitoring Points (in W.C.)										
PM-1	1	Not Read			T					
PM-2		Not Read								
PM-3		Not Read	T			-				
 PM-4		Not Read								
PM-5		Not Read	-							
Air Sparging Temperature (°C)		t Operating								
SVE Exhaust Temperature (°C)		48								
SVE Exhaust PID Reading		0	[-	
Knockout Pot Water Level (in.)		0	Γ							
Date of Last AS Filter Change	2	2/13/2001	•		1				<u> </u>	
Date of Last SVE Filter Change		3/26/2001	T							
Highest Vicinity Ambient PID Reading		No odors								
Location										
		· · · · · · · · · · · · · · · · · · ·			-			-		

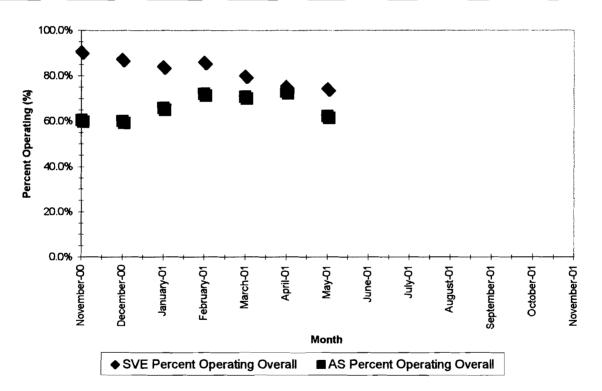
VS - Valve Setting, % (e.g., 0, 25, 50, 75, 100)

Comments: 5/1: AS not working-could not restart.

TABLE 2-2

CUMULATIVE SYSTEM RUNTIME Harrison Subresidency

_				OVER	ALL	MONTH		
Month	SVE Cumulative Hours Running (approx.)	AS Cumulative Hours Running (approx.)	Cumulative Hours Available	SVE Percent Operating Overall	AS Percent Operating Overall	SVE Percent Operating - Month	AS Percent Operating Month	
November-00	654	436	720	90.8%	60.6%	90.8%	60.6%	
December-00	1,280	879	1,464	87.4%	60.0%	84.1%	59.5%	
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	75.3%	73.0%	91.6%	84.1%	
May-01	3,781	3,173	5,088	74.3%	62.4%	68.3%	0.0%	
June-01			5,808					
July-01			6,552					
August-01			7,296					
September-01			8,016					
October-01			8,760					
November-01			9,480					



Notes:

1

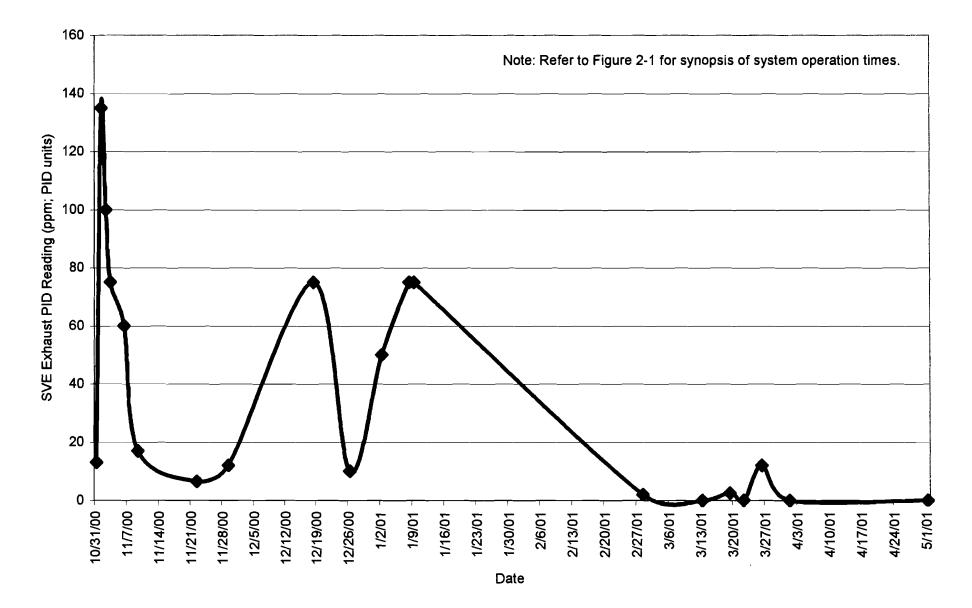
(a) Due to a malfunction in the SVE elapsed timer in February, this value is not representative of the actual hours of operation.(b) This value is calculated using an estimated value for SVE elapsed time.

TABLE 2-3 MONTHLY OPERATION AND MAINTENANCE REPORT

	H: <u>May 2001</u>				
	D:				
TUDIO					
TYPICA	L OPERATING P	ARAMETERS			
	Pressure	Flow			
	(psi)	(scfm)			
SP 1					
SP 2					
SP 3					
SP 4					
Vapor Extraction (Total Flow = 218 CFM)					
· · · · · · · · · · · · · · · · · · ·	Vacuum				
	(inH ₂ O)	<u> </u>			
VE 1	13				
VE 2	13				
VE 3	10				
VE 4	11				
Was quarterly well sampling conducted? Yes x No If yes, date: <u>May 24, 25 2001</u>					
	Attende SPARE SPARE SPARE TYPICA SP 1 SP 2 SP 3 SP 4 Vapor E VE 1 VE 2 VE 3 VE 4 L Was cond	SPARE PARTS ORDERED TYPICAL OPERATING PA Pressure (psi) SP 1 (psi) SP 2 (SP 3) SP 4 Vapor Extraction (Total Flow Vacuum (inH ₂ O) VE 1 13 VE 2 13 VE 3 10 VE 4 11 ' Was quarterly well samp conducted? Yes x			

FIGURE 2-2 SVE EXHAUST PID READINGS FOR THE YEARS 2000-2001 Harrison Subresidency

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ATTACHMENT A

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MONITORING WELL DATA SUMMARY

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

WELL ID: MW 3	BASELINE (May 2000)	QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3 Q	UARTER 4	TARGET EFFLUEN
Volatile Organics (ug/	 L)					CRITERIA
MTBE	50	21	ND		(50
Benzene	64	ND	2			•
Toluene	21	ND	2			,
Ethylbenzene	350	ND	ND			
m,p-Xylene	460	-	-			•
O-Xylene	65	-	-			•
Xylenes (total)	525	2	170			•
TOTAL BTEX	960.0	2.0	174			50
Semi-volatile org.(ug/l) (
2-Methylnaphthalene	Í		ND			50
Napthalene	160		4 J			25
Metals (ug/L)						
Chlonde	24,000	•	•		ĺ	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
тос	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)	QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/	L)					GATIERIA
MTBE	13	3	ND			50
Benzene	4.4	ND	ND			1
Toluene	ND	ND	ND			1
Ethylbenzene	22	2	2			9
m,p-Xylene	•	•	-			•
O-Xylene	•	•	-			•
Xylenes (total)	13	ND	1			•
TOTAL BTEX	39.4	2.0	2			50
Semi-volatile org.(ug/l 2-Methyinaphthalene Napthalene)		ND ND			50 25
Metals (ug/L)						
Chloride	8.000	•	•			250,000
Sodium	22,000	•	•			20,000
fron (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

+Disk No: DATA J 104xx-xxx0446-NYSDOT0446-173 Harrison Spill - ConstructionWonthly reporte June 2001/2Well Data temp PV6-08 x/s WELL DATA 6/28/01 11:39-17 AM+

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

			2001						
WELL ID: MW 5	BASELINE (May 2000)	QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUENT CRITERIA			
Volatile Organics (ug/	 L)					GAILINA			
MTBE	150	ND	ND			50			
Benzene	14	ND	1			•			
Toluene	32	2	2			1			
Ethylbenzene	410	ND	ND			•			
m,p-Xylene	•	•	- 1	}		an an tao am			
O-Xylene	•	•	-			9			
Xylenes (total)	460	43	230			<u>.</u>			
TOTAL BTEX	916.0	45.0	233			50			
Semi-volatile org.(ug/	 }								
2-Methylnaphthalene	1		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			
Suffate	í ◆	•	17,000			250,000			
тос	•	•	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)	QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUEN CRITERIA
Volatile Organics (ug/	 L)					GRITERIA
MTBE	73	20	ND			50
Benzene	7.9	ND	ND			•
Toluene	7	CN.	ND			1
Ethylbenzene	98	ND	ND			•
m,p-Xylene	•	•	-			•
O-Xylene	•	•	-			
Xylenes (total)	112	21	6	1		1
TOTAL BTEX	224.9	21	6			50
Semi-volatile org.(ug/	 }					
2-Methylnaphthalene	Í		ND			50
Napthalene			ND			25
Metals (ug/L)						
Chioride	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

+Disk No.: IUms-snrt Idata0Hasson0446-NYSDOT0446-173 Harrison Spill - ConstructionMonthly reports/January 2001Montening Data Summary - Table 2 - Figure 7 star WELL DATA 221/2001 2 39 01 PM+

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

WELL ID: MW 7		QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUEN CRITERIA
Volatile Organics (ug/	L)					
MTBE	16	38	17			50
Benzene	3.4	ND	ND			•
Toluene	4	ND	ND			9
Ethylbenzene	5.7	ND	ND			•
m,p-Xylene	•	•	-			•
O-Xylene	•	٠	-			۰
Xylenes (total)	4.8	ND	ND			1
TOTAL BTEX	17.9	ND	0			50
 /Semi-volatile org.(ug)					
2-Methylnaphthalene			ND			50
Napthalene			ND			25
Metals (ug/L)						
Chloride	40,000	•	•			250,000
Sodium	35,000	•	•			20,000
Iron (totai)	•	•	2700			300
Iron (dissolved)	•	•	1880			300
Lead	•	•	•			25
Other (ug/L)						
Nitrogen, Nitrate	•	•	ND			10,000
Sulfate	•	•	15,000			250,000
тос	•	•	16,000	[(N/A
Petroleum Hydrocarbon	•	•	•			N/A
Carbon Dioxide	•	•	78,000			N/A
Dissolved Oxygen	3.2	3.12	4.43			N/A

			24			
WELL ID: MW 8		QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	TARGET
	(May 2000)	(JAN 2001)				CRITERIA
Volatile Organics (ug/	L)					
MTBE	68	6	ND			50
Benzene	110	ND	ND			•
Toluene	26	ND	2	J		,
Ethylbenzene	60	ND	ND			•
m,p-Xylene	160	ND	-			•
O-Xylene	40	ND	-			
Xylenes (total)	200	ND	34			•
TOTAL BTEX	396.0	ND	36			50
Semi-volatile org.(ug/l)					
2-Methylnaphthalene			ND			50
Napthalene	34		ND			25
Metais (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	· ·	•	•			N/A
Carbon Dioxide	264,000	•	37.000			N/A
Dissolved Oxygen	1.5	6.3	4.6			N/A

+Date No 11Lma-anr11/data/04/sc-scot0446-NYSDDT0446-173 Hamison Spill - Construction/Monitry reports/January 2001/Monitoring Data Summary - Table 2 - Figure 7 xis WELL DATA 2/21/2001 2 38 01 PM+

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

1

WELL ID: MW 9	BASELINE (May 2000)	QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/	 L)					
MTBE	ND	ND	ND			50
Benzene	ND	ND	ND			
Toluene	ND	ND	ND			1
Ethylbenzene	ND	ND	ND			1
m,p-Xylene	•	•	-			1
O-Xylene	•	•	-			•
Xylenes (total)	ND	ND	ND			,
TOTAL BTEX	ND	ND	0			50
Semi-volatile org.(ug/l)					
2-Methyinaphthalene	í l		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	ł	1	250,000
TOC	•	•	18,000			N/A
Petroleum Hydrocarbon	•	•	•		ļ	N/A
Carbon Dioxide	•	•	ND		[N/A
Dissolved Oxygen	3.3	7.5	5.49			N/A

WELL ID: PC 1	BASELINE	QUARTER 1		01 QUARTER 3	OI APTER A	TARGET
WELL ID. FOT	(May 2000)	(JAN 2001)	WORNTEN 4			CRITERIA
Volatile Organics (ug/	L)					GRITERIA
MTBE	ND	ND	NA			50
Benzene	ND	ND	NA			•
Toluene	ND	ND	NA			9
Ethylbenzene	ND	ND	NA			•
m,p-Xylene	ND	ND	NA			•
O-Xylene	ND	ND	NA			*
Xylenes (total)	ND	ND	NA			•
TOTAL BTEX	ND	ND	NA			50
Semi-volatile org.(ug/l)					
2-Methyinaphthalene	Í		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		ł	N/A
Carbon Dioxide	67,000	•	NA			N/A
Dissolved Oxygen	2.4	4.11	NA			N/A

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

WELL ID: SP 1						
	BASELINE (May 2000)	QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/	 "L)					UKI I CINIA
MTBE	3.2	31	ND			50
Benzene	1.4	ND	ND			•
Toluene	3.7	ND	ND			•
Ethylbenzene	4.0	ND	ND			•
m,p-Xylene	8.1	-	•			•
O-Xylene	2.9	-	-			•
Xylenes (total)	11.0	ND	ND			•
TOTAL BTEX	31.1	ND	ND			50
Semi-volatile org.(ug/l)					
2-Methyinaphthalene	Í		•			50
Napthalene			1			25
Metals (ug/L)						
Chloride	16,000	•	•	Ì		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		OULOTER -				
WELL ID: 5P 1B	(May 2000)	QUARTER 1 (JAN 2001)	QUARIER Z	QUARTER 3	QUARTER 4	TARGET EFFLUEN CRITERIA
Volatile Organics (ug/	 L)					GRITERIA
MTBE	4.9	•	ND			50
Benzene	2.1	•	ND			1
Toluene	ND	•	ND			•
Ethylbenzene	ND	•	ND			•
m,p-Xylene	3.5	•	-			•
O-Xylene	5.6	•	-			•
Xylenes (total)	9.1	•	ND			•
TOTAL BTEX	20.3	٠	ND			50
Semi-volatile org.(ug/l						
2-Methyinaphthalene	Í		•			50
Napthalene			1			25
Metais (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

+Diak No.: WLms-env11/data64/xx-xxx00445-NYSDOTI0445-173 Hamteon Spill - Construction/Monthly reports/January 2001/Manetoring Data Summary - Table 2 - Figure 7 ste WELL DATA 2/21/2001 2 39:01 PM+

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

WELL ID: SP 2	DAFFIG					
WELL ID: 3P 2		QUARTER 1 (JAN 2001)	QUANTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUEN CRITERIA
Volatile Organics (ug/	l "L)					GRITERIA
MTBE	18	•	14	}		50
Benzene	19	•	ND	ļ ļ		1
Toluene	25	•	ND			1
Ethylbenzene	110	•	ND	[[•
m,p-Xylene	52	•	-			,
O-Xylene	11	•	-			•
Xylenes (total)	63	•	ND			•
TOTAL BTEX	217.0	•	0.0			50
Semi-volatile org.(ug/l)					
2-Methylnaphthalene	Í		•			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)			ĺ			
Nitrogen, Nitrate	• (•	•			10,000
Sulfate	•	•	•	ļ		250,000
тос	•	•	•			N/A
Petroleum Hydrocarbon	• 1	•	•			N/A
Carbon Dioxide	•	• [•			NA
Dissolved Oxygen	2.5	•	3.1		li li	N/A

WELL ID: SP 3						
	BASELINE (May 2000)	QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUENT CRITERIA
Volatile Organics (ug/	 L)					GRITERIA
MTBE	38	•	7			50
Benzene	110	•	ND			1
Toluene	39	•	ND			,
Ethylbenzene	200	•	ND			•
m,p-Xylene	180	•	-			,
O-Xylene	57	•	-			•
Xylenes (total)	237	•	15			
TOTAL BTEX	586.0	•	15.0			50
Semi-volatile org.(ug/l	())					
2-Methylnaphthalene	Í		•			50
Napthalene			1			25
Metals (ug/L)						
Chloride	6,000	•	•			250,000
Sodium	38,000	•	•			20.000
Iron (total)	•	•	•			300
Iron (dissolved)	•	•	•	[1	300
Lead	•	•	•			25
Other (ug/L)						
Nitrogen, Nitrate	•	•	•			10,000
Sulfate	• }	•	•			250,000
тос	•	•	•		Í	NA
Petroleum Hydrocarbon	• •	•	•			N/A
Carbon Dioxide	•	•	•			N/A
Dissolved Oxygen	3.4	•	4.21			N/A

+Disk No.: \k.ms-snrt1/size404xx-xxx0446-NYSDOT10445-173 Hamieon Spill - Construction\Monthly reports\January 2001\Monthly reports\January 2011\Monthly reports\January - Table 2 - Figure 7 xis WELL_DATA 2/21/2001 2 39 01 PM+

ATTACHMENT A (Page 8 of 8)

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

WELL ID: SP 4	BASELINE (May 2000)	QUARTER 1 (JAN 2001)	QUARTER 2	QUARTER 3	QUARTER 4	TARGET EFFLUENT
Volatile Organics (ug/	 L)					CRITERIA
MTBE	24	•	ND			50
Benzene	24	•	ND			•
Toluene	3.8	•	ND			\$
Ethylbenzene	35	•	ND			•
m,p-Xylene	9.5	•		·		1
O-Xylene	2.4	•	-			•
Xylenes (total)	11.9	•	ND		l	•
TOTAL BTEX	74.7	•	0.0			50
				ļ		
Semi-volatile org.(ug/l) [ļ				
2-Methylnaphthalene		•	•			50
Napthalene		•	1	l		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)			ļ	ļ		
Nitrogen, Nitrate	• (•	• 1		(10,000
Sulfate	•	•	•	Í		250,000
TOC	•	•	•			N/A
Petroleum Hydrocarbon	• [•	•	ļ		N/A
Carbon Dioxide	•	•]	•	Ì		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.

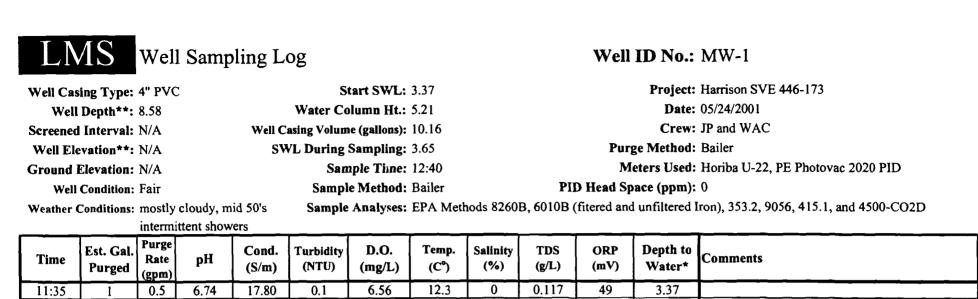
Note - Numbers in bold exceed Target Effluent Criterion.

- indicates included in Total, I.e. Total xylenes.

J - estimated concentration; compound present below quantitation limit.

ATTACHMENT B

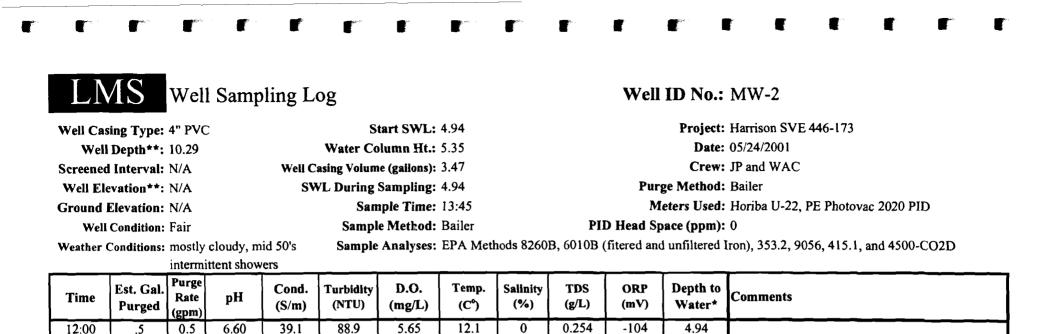
WELL SAMPLING LOG



Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C⁰)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments
11:35	l	0.5	6.74	17.80	0.1	6.56	12.3	0	0.117	49	3.37	
11:45	6	0.5	5.67	19.10	0.5	8.01	11.7	0	0.124	90	6.70	
11:57	12	0.5	5.58	18.90	17.8	6.42	11.6	0	0.123		8.41	
	L										L	
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Comments										L		
Comments	Junients.											

Notes: Volume is measured in Gallons

* - Measurement taken from top of well casing



0

0

0

0.243

0.243

0.244

-100

-99

-86

dry

6.41

dry

restart pumping

Notes: Volume is measured in Gallons

12:10

12:20

12:25

Comments:

5.5

6

8

0.5

0.5

0.5

6.96

4.09

7.09

37.4

37.4

37.5

873

544

245

2.64

3.44

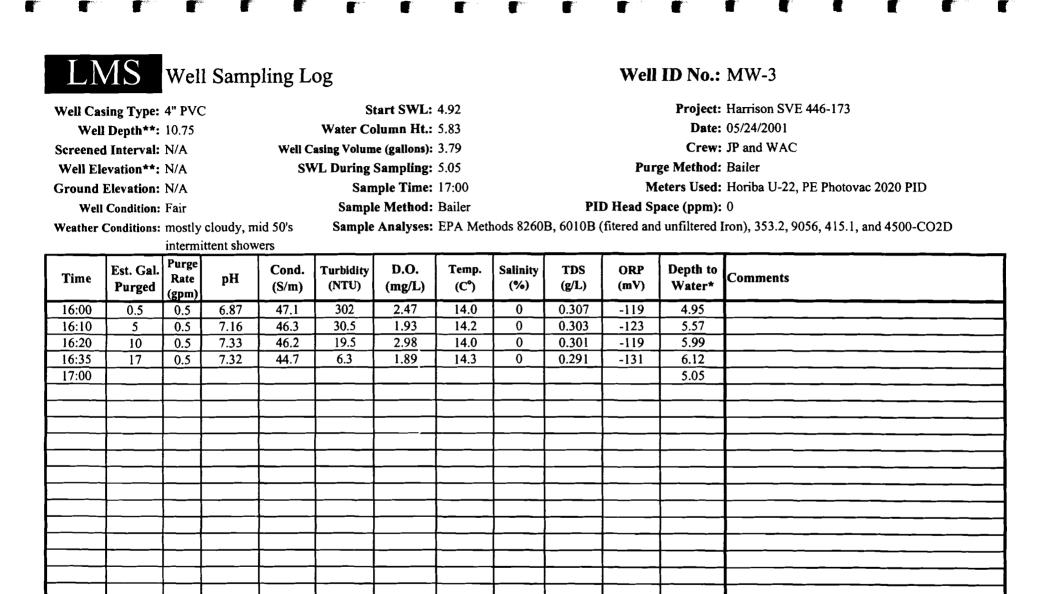
4.23

12.4

12.0

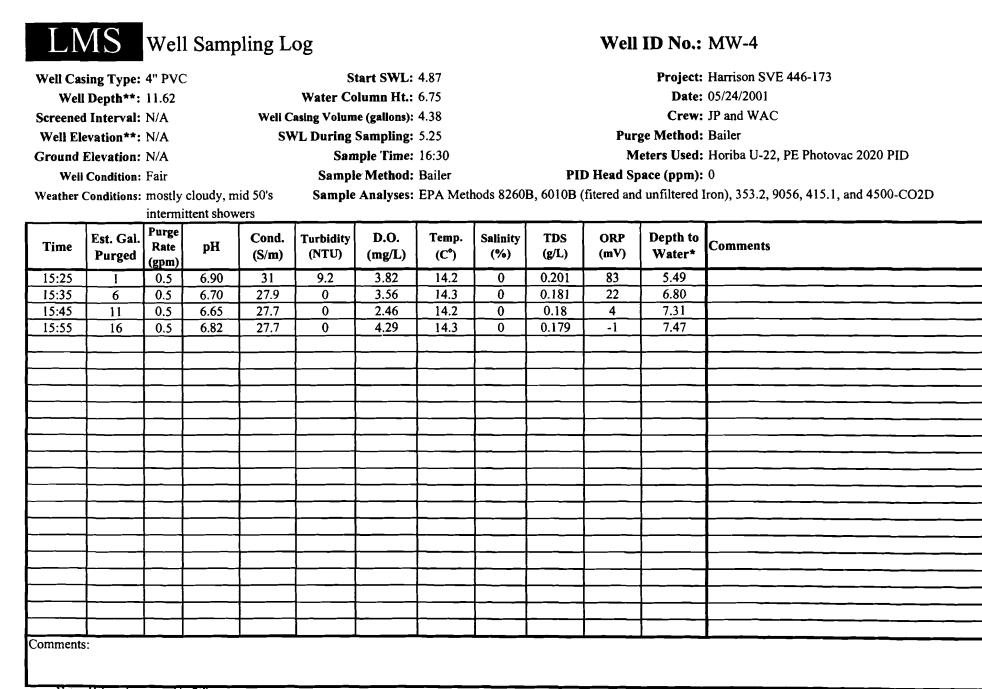
11.9

* - Measurement taken from top of well casing



Notes: Volume is measured in Gallons

Comments:



Notes: Volume is measured in Gallons







Well Sampling Log

Well ID No.: MW-5

Well Casing Type: 4" PVC	Start SWL: 5.28
Well Depth**: 11	Water Column Ht.: 5.72
Screened Interval: N/A	Well Casing Volume (gallons): 3.71
Well Elevation**: N/A	SWL During Sampling: 5.42
Ground Elevation: N/A	Sample Time: 18:00
Well Condition: Fair	Sample Method: Bailer
Weather Conditions: mostly close	udy, mid 50's Sample Analyses: EPA l

Project: Harrison SVE 446-173 Date: 05/24/2001 Crew: JP and WAC Purge Method: Bailer Meters Used: Horiba U-22, PE Photovac 2020 PID

PID Head Space (ppm): 0

s: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2, 9056, 415.1, and 4500-CO2D

intermi	ttent s	show	ers

Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments	
16:50	1	0.5	7.20	51.3	3.2	4.35	14.8	0	0.33	135	5.28		
17:00	6	0.5	7.22	45.8	0.9	5.02	14.6	0	0.298	-133	7.39		
17:10	11	0.5	7.18	44.5	1.4	4.89	_14.2	0	0.29	-138	7.75		
17:20	16	0.5_	7.11	44	0	6.12	14.0	0	0.288	-137	7.95		
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					L						L		
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Comments	Notes: Volume is measured in Gallons												

Notes: Volume is measured in Gallons

Well Casing Type: 4" PVC Start SWL: 5.20										Harrison SVE 446-173		
	Depth**:					lumn Ht.:				05/24/2001		
	Interval:			Well C	asing Volum							JP and WAC
	evation**:				L During					Pur	ge Method:	Bailer
Ground]	Elevation:	N/A			-	ple Time:				М	eters Used:	Horiba U-22, PE Photovac 2020 PID
Well	Condition:	Fair			Sample	e Method:	Bailer		PII	D Head Sp	oace (ppm):	0
Weather (Conditions:	mostly o	loudy, m	id 50's	Sample	Analyses:	EPA Metl	hods 82601	B, 6010B (fitered and	d unfiltered l	fron), 353.2, 9056, 415.1, and 4500-CO2D
_		intermit	tent show	ers								
Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments
9:35	.5	1	6.62	45.7	17.5	5.18	14.2	0	0.309	-13		
9:45	10	0.5	6.82	47	4.1	2.06	13.3	0	0.305	-157	9.95	strong petroleum hydrocarbon odor
9:55	15	0.5	6.87	39.6	<u>124</u> 5.2	<u>4.56</u> 9.47	11.9	0	0.257	-130 -131	12.02	
10:05	20	0.5	6.84	39.7	5.2	9.47	12.1		0.20	-131	13.92	
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Notes: Volume is measured in Gallons

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* - Measurement taken from top of well casing

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Well Sampling Log

Well ID No.: MW-7

Well Casing Type:	4" PVC	Start SWL: 4	4.56
Well Depth**:	14.67	Water Column Ht.:	10.11
Screened Interval:	N/A	Well Casing Volume (gallons): (6.57
Well Elevation**:	N/A	SWL During Sampling: 1	5.04
Ground Elevation:	N/A	Sample Time:	12:00
Well Condition:	Fair	Sample Method: 3	Bailer
Weather Conditions:	mostly cloudy, mid	50's Sample Analyses:	EPA N

Project: Harrison SVE 446-173 Date: 05/24/2001 Crew: JP and WAC Purge Method: Bailer Meters Used: Horiba U-22, PE Photovac 2020 PID

PID Head Space (ppm): 0

EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2, 9056, 415.1, and 4500-CO2D

i	nterm	ittent	show	ers	
<u> </u>	_				_

Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C⁰)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments
10:50	1	1	6.71	37.1	257	3.65	12.0	0	0.241	-69	4.56	
11:00	10	1	6.83	36.6	14.1	4.33	13.7	0	0.236	-67	8.63	
11:10	20	1	6.56	35.5	0.5	2.38	12.0	ō	0.231	-75	10.10	
11:20	30	1	6.59	35.3	2.2	4.43	11.9	0	0.235	-81	10.58	
11:55											5.09	
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Comments												

Notes: Volume is measured in Gallons



LMS

Well Sampling Log

Start SWL: 6.87 Well Casing Type: 4" PVC Water Column Ht.: 7.7 Well Depth**: 14.57 Well Casing Volume (gallons): 5.01 Screened Interval: N/A **SWL During Sampling:** 7.53 Well Elevation**: N/A Sample Time: 15:05 Ground Elevation: N/A Sample Method: Bailer Well Condition: Fair Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2, 9056, 415.1, and 4500-CO2D Weather Conditions: mostly cloudy, mid 50's

Well ID No.: MW-8

Project: Harrison SVE 446-173

Date: 05/24/2001

Crew: IP and WAC

Purge Method: Bailer

Meters Used: Horiba U-22, PE Photovac 2020 PID

PID Head Space (ppm): 6.4

intermittent showers

Time	Dott Onli	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments	
13:53	1	0.5	7.46	150	115	3.63	13.8	0.1	0.96	-60	7.12		
14:03	6	0.5	7.34	87	21.5	1.59	14.1	0	0.558	-14	10.25		
14:13	11	0.5	7.14	53.2	9.4	2.03	13.8	0	0.339	-17	11.37		
14:23	16	0.5	7.16	48.7	17.7	4.6	13.6	0	0.318	-23	17.65		
15:05											7.53		
							_						
						_							
							_						
Comment	omments:												

Notes: Volume is measured in Gallons

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	ЛS	Well	Samp	oling L	og					Well	ID No.:	MW-9		
Vell Cas	sing Type:	2" PVC	2		St	art SWL:	7.30	7.30 Project: Harrison SVE 446-173						
Well	Depth**:	13.74			Water Co	lumn Ht.:	6.44		05/24/2001					
creened	i Interval:	N/A		Well C	asing Volum	e (galions):	1.03		JP and WAC					
Well El	evation**:	N/A			VL During				Bailer					
	Elevation:				-	nple Time: 16:00 Meters Used: Horiba U-22, PE Photovac 2020 PID								
	Condition:					e Method:			PI		pace (ppm):	-		
	Conditions:		cloudy, m	nid 50's	-			hods 82601		-		Iron), 353.2, 9056, 415.1, and 4500-CO2D		
		-	ttent show		•	•				·				
Time	Est. Gal. Purged	Purge Rate (gpm)	pH	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments		
14:30	0.25	0.25	8.83	46.1	108	7.63	17.4	0	0.303	-45				
14:45	0.25	4	8.72	48.6	4	6.39	17.6	0	0.316	16	8.27			
15:00	0.25	7.75	8.45	50.1	3.5	6.08	17.6	0	0.321	30	8.51			
15:15	0.25	12.5	8.04	51	1.6	5.42	<u>17.7</u>	0	0.327	36	8.61			
15:30	0.25	15.25	7.62	50.2	2.2	5.49	17.2	0	0.321	38	8.81			
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Comments:

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



Well ID No.: PC-1

Start SWL: 6.55 Well Casing Type: 2" PVC Pezometer Well Depth**: 6.87 Screened Interval: N/A Well Elevation**: N/A Ground Elevation: N/A Sample Method: N/A Well Condition: Fair

Water Column Ht.: 0.32 Well Casing Volume (gallons): N/A SWL During Sampling: N/A Sample Time: N/A

Date: 05/24/2001 Crew: JP and WAC Purge Method: DC volt submersible Whale pump Meters Used: Horiba U-22, PE Photovac 2020 PID

Project: Harrison SVE 446-173

PID Head Space (ppm): 0

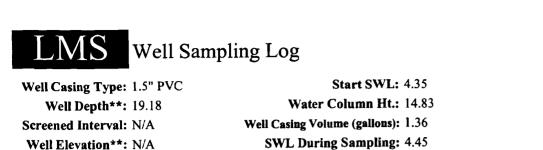
Weather Conditions: mostly cloudy, mid 50's

intermittent showers

Sample Analyses: Not sampleable due to insufficient yield

Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments
17:30	0.05										Dry	
17:35												Not sampleable
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Comments	5:											

Notes: Volume is measured in Gallons



Sample Time: 11:25

Sample Method: Bailer

Well ID No.: SP-1

Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2, 9056, 415.1, and 4500-CO2D

Project: Harrison SVE 446-173 Date: 05/25/2001 Crew: JP and WAC Purge Method: DC volt submersible Whale pump Meters Used: Horiba U-22, PE Photovac 2020 PID PID Head Space (ppm): 371

Weather Conditions: mostly cloudy, mid 50's

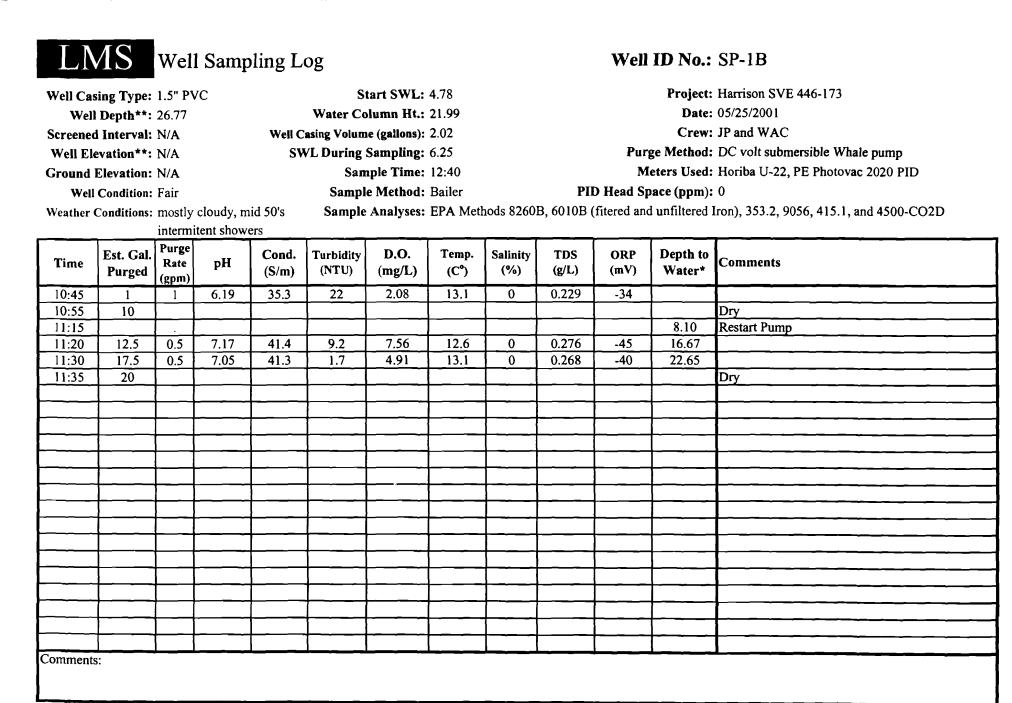
Ground Elevation: N/A

Well Condition: Fair

intermitent showers

Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C⁰)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments
10:05	1	0.5	6.03	41.6	>999	3.59	11.8	0	0.27	117		
10:15	6	0.5	6.49	40.6	37.9	0.81	11.8	0	0.264	85	5.07	
10:25	21	1.5	6.62	40.2	34.3	3.09	11.5	0	0.263	94		
10:35	36	1.5	6.55	40.3	13.5	4.6	11.3	0	0.262	93	5.07	
11:25											4.45	
		11										
	1											
	†	11										
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Comments	s:	<u>. </u>		L	-			<u> </u>		•	•	· · · · · · · · · · · · · · · · · · ·

Notes: Volume is measured in Gallons



Notes: Volume is measured in Gallons

Well Sampling Log Start SWL: 6.40 Well Casing Type: 1.5" PVC Well Depth**: 18.48 ft Water Column Ht.: 12.08 Well Casing Volume (gallons): 1.11 Screened Interval: N/A SWL During Sampling: 7.52 Well Elevation**: N/A Sample Time: 14:05 Ground Elevation: N/A PID Head Space (ppm): 197 Sample Method: Bailer Well Condition: Fair Weather Conditions: mostly cloudy, mid 50's intermitent showers

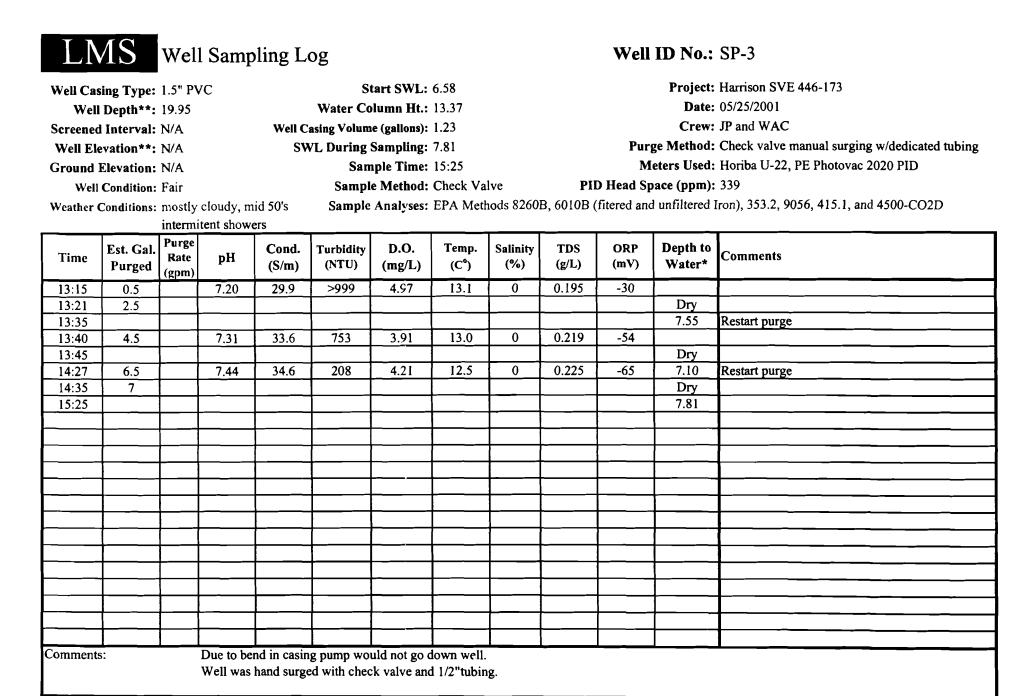
Well ID No.: SP-2

Project: Harrison SVE 446-173 Date: 05/25/2001 Crew: JP and WAC Purge Method: DC volt submersible Whale pump Meters Used: Horiba U-22, PE Photovac 2020 PID

Sample Analyses: EPA Methods 8260B, 6010B (fitered and unfiltered Iron), 353.2, 9056, 415.1, and 4500-CO2D

Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments
12:00	1	0.5	6.80	39.8	>999	2.41	11.8	0	0.258	35	15.65	
12:05	2.5											Stop pumping
12:20	1										9.63	Restart pump
12:25		0.5	7.24	44.1	>999	3.72	11.8	0	0.287	-41	14.20	
12:27	5											Dry
12:55		0.5	7.19	43.1	549	2.8	11.8	0	0.282	-25	9.90	Restart pump
13:00	7.5	0.5	7.09	42.9	442	3.1	11.7	0	0.279	-1	14.29	
13:02	8.5	11										Dry
13:40											8.16	
						_						
		1				_						
	1											
	1	11										
Comment	s:	·										

Notes: Volume is measured in Gallons



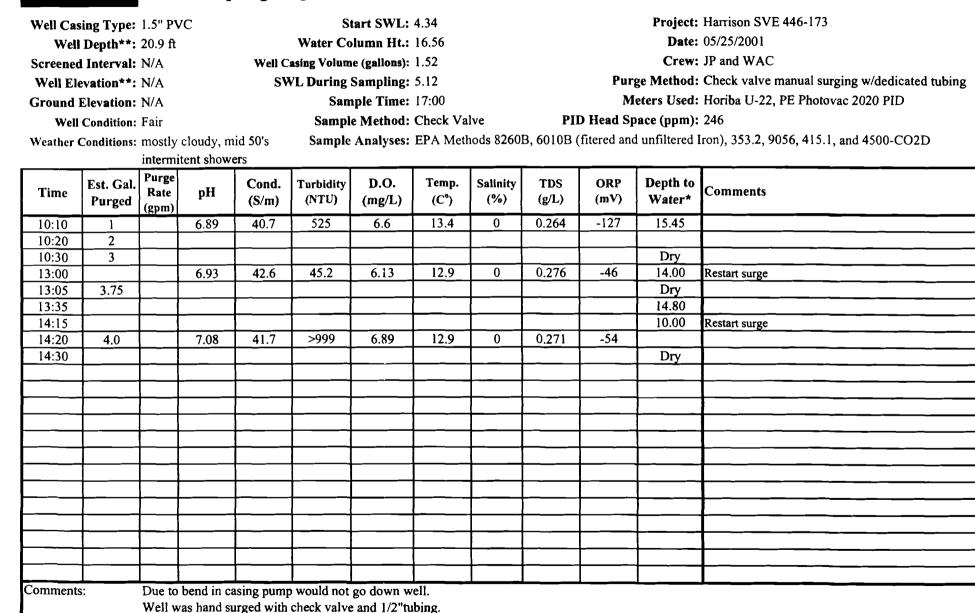
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Notes: Volume is measured in Gallons

* - Measurement taken from top of well casing

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Notes: Volume is measured in Gallons

* - Measurement taken from top of well casing

Well ID No.: SP-4

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Well Sampling Log

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Well Sampling Log

Well Casing Type:1.5" PVC temporary pezometerStart SWL:2.40Well Depth**:5.4 ftWater Column Ht.:3.00Screened Interval:5.4 to 0.4 ftWell Casing Volume (gallons):0.28Well Elevation**:N/ASWL During Sampling:2.45Ground Elevation:N/ASample Time:15:55Well Condition:GoodSample Method:BailerWeather Conditions:mostly cloudy, mid 50'sSample Analyses:EPA Method 8260B

Well ID No.: LF-TP-1

Project: Harrison SVE 446-173 Date: 05/25/2001 Crew: JP and WAC Purge Method: Bailer Meters Used: Horiba U-22, PE Photovac 2020 PID PID Head Space (ppm): 0.0

Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Тетр. (С°)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments
15:30	0.25		7.32	2.07	>999	1.67	12.0	0.1	1.34	-98_		
15:35	1.5		7.20	2.29	>999	4.02	12.2	0.1	1.47	-29		
15:45	3.0		7.31	2.38	>999	4.23	12.4	0.1	1.52	-1		
				L							L	
										L		
				L								
				L							L	
		L										
											L	
	<u> </u>										L	
Comments	omments: Temporary pezometer was removed and the borhole was backfilled with bentonite prior to leaving the site.											

Notes: Volume is measured in Gallons

** - Measurement taken from ground surface



LMS Well Sampling Log

Well Casing Type:	1.5" PVC temporary	pezometer Start SWL:	3.18
Well Depth**:	8.9 ft	Water Column Ht.:	5.72
Screened Interval:	8.9 to 3.9 ft	Well Casing Volume (gallons):	0.53
Well Elevation**:	N/A	SWL During Sampling:	3.74
Ground Elevation:	N/A	Sample Time:	17:40
Well Condition:	Good	Sample Method:	Bailer
Weather Conditions:	mostly cloudy, mid sintermitent showers	50's Sample Analyses:	EPA Method 8260B

Well ID No.: LF-TP-2

Project: Harrison SVE 446-173 Date: 05/25/2001 Crew: JP and WAC Purge Method: Bailer Meters Used: Horiba U-22, PE Photovac 2020 PID PID Head Space (ppm): 0.0

Time	Est. Gal. Purged	Purge Rate (gpm)	рН	Cond. (S/m)	Turbidity (NTU)	D.O. (mg/L)	Temp. (C°)	Salinity (%)	TDS (g/L)	ORP (mV)	Depth to Water*	Comments
16:20	0.25		6.92	187	>999	5.96	11.1	0.1	1.19	-10		
16:22	0.75								_		Dry	
16:40											4.65	
16:45	1		6.88	177	>999	4.71	11.0	0.1	1.14	-7		
16:50											Dry	
17:40	1.75		6.67	142	>999	5.05	11.1	0.1	0.91	24	3.74	
									_			
											1	
	1											
	<u> </u>				1							
_	+									†	1	
	+				<u> </u>							
	<u>├</u> ────			<u> </u>						<u> </u>	· · ·	
Comment	⊥	Tempo	prary pezoi	meter was	removed an	d the borho	le was bac	kfilled wit	h bentonit	e prior to l	eaving the s	ite.

Notes: Volume is measured in Gallons

** - Measurement taken from ground surface

ATTACHMENT C

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TEST BORING LOG

		C			_		_			Boring No	.:	LF-7	[P-1
	VI.	S	Te	est	<u>Bor</u>	ing]	Log	, 		Sheet	1	of	1
Projec	t <u>Na</u>	me:			Harri	son SV	/E			Project No).:	853-	001
Client:								_		Date:	Start	05/25/	200
Driller	;	Jay	Pfat	ff							Finish	05/25/	200
Drillin	g M	etho	od:	-	LMS	AMS	Drill	Rig	(4-foot Macrocores)	Total Dept		5.40	
Boring									vest of MW-6	Depth to V			40
Coordi										Surf. Eleva			
Loggee	_		Wil	liam	A.C	 ar		<u></u>		Hole Diam			nch
Monito		_					PF P	boto	vac 2020 PID				
		ws Or	_			2			Classification Of Material		1		
Ð	010						Sample Retained	P	d - dry E - fine and	- 35-50%	Re	marks ar	hd
Depth (ft)	0"-6"	6"-12"	12"-18"	8"-24"	over	ing	amp etain	Moisture	sm- slightly moist M- medium som	ie - 20-35%	4	mple II	
å	0.''	6"-	12".	18".	Recc	Ins tead	N 3	Σ	C - Coarse	e - 10-20% e - 0-10%		mpic II	
0-4					28	0	N	m	0-4			<u> </u>	
				<u> </u>	40	<u> </u>			dark brown, silty loam, trace F-sa	and and gavel			
							'		4-19 medium brown, sandy silt, some	E-M gravel			
		-						m	19-28 same as above but saturated	I-INI BIAVEI			
					- 10	L	.	W					
4-7.5					48	0	N	m	0-48 medium brown, micasious silt, tra	ace F-sand,	Refu	sal at 7	.5 ft
									little F-gravel.				
									Attempted to install pezometer to refusal				
									times. Full recovery of 4-8 foot interval e				
_									Saturated, sandy, gravel infiltrating boreh interval. Temporary pezometer was insta				
						_			depth of 5.4 ft below the ground surface.				
_									pezometer was removed after it was samp				
									borehole was sealed with bentonite.				
						-							
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L		C	_							Boring No.	.: LF-TP-2
		\mathbf{N}	T	est	Bor	ing .	Log			Sheet	<u>1</u> of 1
Projec	t Na	me			Harri	son S	<u>/E</u>			Project No	
Client										Date:	Start 05/25/200
Drille			Pfa	ff							Finish 05/25/200
Drillin									(4-foot Macrocores)	Total Dept	
Boring			on:		7 ft s	outh a	nd 39	ft w	est of MW-6	Depth to V	
Coord					_			_		Surf. Eleva	
Logge					n A. C	ar				Hole Diam	eter: 2-inch
Monit					nt(s):	г	PE P	hoto	vac 2020 PID		
Depth (ft)	Blo 90	€"-12" 6"-12"	n Sam 	pler 1824	Recovery (in)	Instrument Reading (ppm)	Soil Sample Retained	Moisture	sm- slightly moist M- medium som m - moist C - coarse little	- 35-50% e - 20-35% e - 10-20% e - 0-10%	Remarks and Sample ID.
0-4					35	0	N	m	0-3 dark brown, silty clay loam,		
								w	3-23 medium brown, sandy silt, some	mica trace F-	
									M gravel		
								w	23-26 gray brown, silty clay		
				L				m	26-35 light brown, micaceous silt, some	F-sand,	
									trace clay		
4-8					48	0	N	m	0-13 same as above		
									13-48 more micaceous, mostly silt, tr moist but not wet	ace sano,	
									Installed temporary pezometer to refusal of	lenth of 8.9	
									feet 5.4 ft below the ground surface. The	-	
									was removed after it was sampled and the		
								_	was sealed with bentonite.		
			-								
				 							
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ATTACHMENT D

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14-200

MITKEM ANALYTICAL DATA



"Environmental Testing For The New Millennium"

June 18, 2001

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

RE: Client Project: NYSDOT Harrison SVE, #446-173 Mitkem Lab Project # 81102

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,

Edward A. Lawler Laboratory Operations Manager

Environmental Chemistry Section

JUN 1 9 2001

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

Project Name: NYSDOT Harrison SYE

SDG: 81102

			A	nalytical Rec	uirements	
Customer Sample Code	Laboratory	VOA GC/MS <u>Method #</u>	BNA GC/MS Method #	Pest PCBs <u>Method #</u>	Metals	Other
mus-1	81103001	8240	8270		10010	see losinshoot
mw-2	<u>81102003</u>	82100	8270		6010	lesinsheet
mw-3	81102003	8260	8270		6010	see loginshoot
mw-4	81102004	SALLO	8270		6010	see losincheet
MULS	50050112	82400	8270		6010	see Irgin sheet
<u>mu-6</u>	811020010	82100	8270		6010	See hoginsheat
mu-7	\$1102007	8260	የአካው		10010	see loginsheet
mw-8	81102008	8260	8270		6010	see losinsheet
<u>muz-9</u>	81102009	8240	8270		1000	see login shoot
TB-01	81102010	৫২৫০				
mw-1	51102012				6010	
mw-2	81102013				6010	
<u>mu-3</u>	81102014				<u>le</u> 010	
mw-1	81102015				6010	
mw-5	81102016				6010	_
mu-le	- FIOSOLA				1010	
mw-7	81102018				10010	_
mw-8	81102019				60.0	

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

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Project Name: NYSDOT Harrison SVE

SDG: SIIO2

		Analytical Requirements									
		VOA	BNA	Pest							
Customer	Laboratory	GC/MS	GC/MS	PCBs							
Sample Code	Sample Code	Method #	Method #	Method #	<u>Metals</u>	Other					
MW-9	81102020				6010						

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Volatile (VOA) Analyses

Project Name: NYSDOT Harrison SVE

SDG: 81102

Laboratory Sample ID	Matrix	Date <u>Collected</u>	Date Received <u>at Lab</u>	Date Extracted	Date Analyzed
91102001	Aq	05/24/01	05/25/01		5 30 01
81102002		ļ			
81102003					
8110,2004					
81102005					
81102006					
81102007					
81103008					
81102009					
81102010	V	\downarrow	\rightarrow	J _	\checkmark
				. <u></u>	

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Semivolatile (BNA) Analyses

Project Name: NYSDOT Harrison SVE

SDG: 81102

Matrix	Date <u>Collected</u>	Date Received <u>at Lab</u>	· Date <u>Extracted</u>	Date <u>Analyzed</u>
Ag	05/24/01	05/25/01	5/24/01	6 2 101
				6/3/01
_				
		_		
_	_			
		······		
		Matrix Collected	Date Received Matrix Collected at Lab	Matrix Date Collected Received at Lab Date Extracted Arg Cs/arilo1 05/arilo1 5/2/1/01 Image: Collected Image: Collected Image: Collected Image: Collected Image: Collected Image: Collected

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Volatile (VOA) Analyses

Project Name: NYSDOT Harrison SVE

SDG: SILCA

Laboratory Sample ID	Matrix	Analytical <u>Protocol</u>	Extraction <u>Method</u>	· · Low/Med. Level	Dil./Conc. <u>Factor</u>	
31102001	Aq	8240		L	1	
81102003						
81102003						
81162004						
31102005						
\$110,20010			Ì			
FIDEOD						
800000						
81103009						
81102010		\downarrow		\checkmark	4	

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Semivolatile (BNA) Analyses

Project Name: NYSDOT Harrison SVE

SDG: 81102

Laboratory Sample ID	Matrix	Analytical <u>Protocol</u>	Extraction <u>Method</u>	Auxiliary <u>Cleanup</u>	Dil/Conc <u>Factor</u>	
81102001	Ag	8270	3520			
RUDZOOZ					i	
81102003						
81102004	·					
811122005						
81107006						
81102007						
81102008						
81102009	- V	\checkmark		1	J	
				-		

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Inorganic Analyses

Project Name: NYSDOT Harrison SVE

SDG: 81102

Laboratory Sample ID	Matrix	Metals Requested	Date Received <u>at Lab</u>	Date <u>Analyzed</u>	
81102001	Aq	1010	05/25/01	5/25/01	
81102002					
<u>81102003</u>					
81102004					
81102005					
811070000					
51107007					
81103008		<u>.</u>			
81102009					
81102012					
81102013					
81102014					
81102015					
81102016					
51102017					
8102018					
81102019					

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Inorganic Analyses

Project Name: NYSDOT Harrison SVE

SDG: 8110ス

Laboratory Sample ID	Matrix	Metals Requested	Date . Received <u>at Lab</u>	Date <u>Analyzed</u>
81102020	μą.	1010	05/25/01	5/25/01

Analytical Data Package for LMS Engineers

Client Project: NYSDOT Harrison SVE, #446-173

SDG# 81102

Mitkem Project ID: 81102 .

June 18, 2001

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SDG Narrative

Mitkem Corporation submits the enclosed data package in response to LMS Engineers' NYSDOT Annisville Circle project. Under this deliverable, analysis results are presented for seven aqueous samples that were received on May 15, 2001 and assigned Laboratory Number 80973. 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:

<u>Lab ID</u>	<u>Analysis</u>
81102001	V, S, M, W
81102002	V, S, M, W
81102003	V, S, M, W
81102004	V, S, M, W
81102005	V, S, M, W
81102006	V, S, M, W
81102007	V, S, M, W
81102008	V, S, M, W
81102009	V, S, M, W
81102010	V
	81102001 81102002 81102003 81102004 81102005 81102006 81102007 81102008 81102008 81102009

V = Volatile Organics - NYSDEC ASP Method 8260B

S = Semivolatile Organics - NYSDEC ASP Method 8270C, Base/Neutral compoundsM = Metals (TAL list) - NYSDEC ASP Methods 6010B for Total and Dissolved IronW = Wet Chemistry - Nitrate, Free CO2, Total Organic Carbon, Sulfate

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category A deliverable.

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:

Samples were analyzed for an abbreviated list of parameters. Samples are reported to a nominal 1ppb level for all compounds. 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. Semivolatile Organic Analysis:

Samples were analyzed for an abbreviated list of parameters.

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.

4. Metals Analysis:

Samples were analyzed for total and dissolved iron only. Samples for dissolved iron were filtered and preserved upon receipt at the laboratory. Samples for dissolved iron are identified by the addition of the letter "D" to the laboratory ID, and by a note in the "Comments" line at the bottom of the data sheet.

Lab control sample: spike recoveries were within the QC limits

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

5. Wet Chemistry Analyses:

Samples were analyzed for Free CO2 and Sulfate by Standard Methods SM4500-CO2-D and SM4500-SO4-E respectively, and for Nitrate and Total Organic Carbon by EPA Methods 353.2 and 415.1 respectively.

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

No other unusual occurrence was noted during wet chemistry analyses.

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.

tlut

Edward A. Lawler Laboratory Operations Manager 6/18/01

Sample Transmittal Documentation

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05/31/01 04:13 PM		Page 1 of 3	Page 1 of 3 Revision				Lab Workorder #: 81102
Lab Workorder	81102 R4			Logge	d In By:	ÉP	_
Client:	Lawler, Matusky & Skell					DAS	
Lab Workorder ID: Client Proj ID: Client PO #:	NYSDOT Harrison SVE 446-173 NA	446-173		Review	wed By:	/74-3	_
Project / Profile Name	NYSDOT Harrison SVE					5/25/01 14:14	
Date Due:	06/08/01			Date (Closed: 05	5/25/01 14:58	
Customer Service:	KEB			Desia	4 C404-00 1	1/D	
Del Req'd: Completed?:	ASP A (2 copies)			Projec	t Status: V	wr	
Profile Notes:	8260 BTEX/MTBE+Nap	thalene at 1 ug/L, 8270 Na	pthalene & 2 methylnap	thelene only	У		
Project Notes:						ample 011, add 82	70. R4: Added Dissolved Fe
Lab ID <u>Client ID</u> 81102001 MW-1	<u>Matrix</u> 1 W S	Type <u>Analysis Code</u> SAMPLE 8260W	<u>Collected</u> 05/24/01 12:40	<u>Received</u> 05/25/01	<u>Due</u> 06/08/01	<u>Notes</u>	
	VV 5	353.2W NO2	03/24/01 12.40	05/25/01	00/08/01		
		S4500WFCO2					
		6010W Fe 6010W PREP					
		415.1W TOC					
		S4500EWSO4					
		82 7 0W					
81102002 MW-2	w s	AMPLE 8260W	05/24/01 13:45	05/25/01	06/08/01		
		353.2W NO2					
		S4500WFCO2 6010W Fe				• •	
		6010W PREP					
		415.1W TOC					
		S4500EWSO4					
		8270W					
81102003 MW-3	W S	AMPLE 8260W	05/24/01 17:00	05/25/01	06/08/01		
		353.2W NO2 S4500WFCO2					
		6010W Fe					
		6010W PREP					
		415.1W TOC					
		S4500EWSO4 8270W					
1102004 1 577 4		8270W					
31102004 MW-4	w s		05/24/01 16:30	05/25/01	06/08/01		

Lab Workorder #: 81102						
	Notes		06/08/01		10/80/90	06/08/01
ATION Revision #4	Received Due	05/25/01	05/25/01	05/25/01	05/25/01	05/25/01
<u>ORPORA</u> Re	Collected	05/24/01 18:00	05/24/01 11:15	05/24/01 12:00	05/24/01 15:05	05/24/01 16:00
MITKEM CORPORATION Page 2 of 3 Revision #4	Analysis Code 6010W Fe 6010W PPEP 415.1W TOC S4500EWSO4 8270W	8260W 353.2W NO2 84500WFCO2 6010W Fe 6010W PREP 415.1W TOC 84500EWSO4 8270W	8260W 353.2W NO2 84500WFCO2 6010W Fte 6010W PREP 415.1W TOC 84500EWSO4 8270W	8260W 353.2W NO2 S4500WFCO2 6010W Fte 6010W PREP 415.1W TOC S4500EWSO4 8270W	8260W 353.2W NO2 84500WFCO2 6010W FREP 6010W PREP 415.1W TOC 84500EWSO4 8270W	8260W 353.2W NO2 S4500WFCO2 6010W Fe
	Matrix Type W SAMPLE	W SAMPLE	W SAMPLE	W SAMPLE	W SAMPLE	W SAMPLE
05/31/01 04·13 PM		81102005 MW-5 V	81102006 MW-6 V	81102007 MW-7	81102008 MW-8	81102009 MW-9

Lab Workorder #: 81102											
	Notes		06/08/01 DISSOLVED IRON	06/08/01 DISSOLVED RON	DISSOLVED IRON	06/08/01 DISSOLVED RON	06/08/01 DISSOLVED IRON	06/08/01 DISSOLVED IRON	DISSOL VED IRON	06/08/01 DISSOLVED IRON	06/08/01 DISSOLVED IRON
	Due	06/08/01	06/08/01	06/08/01	06/08/01	06/08/01	06/08/01	06/08/01	06/08/01	06/08/01	06/08/01
Revision #4	Received	02/25/01	05/25/01	05/25/01	05/25/01	05/25/01	05/25/01	05/25/01	05/25/01	05/25/01	05/25/01
Revi	Collected	05/24/01 12:00 05/25/01	05/24/01 12:40	05/24/01 13:45	05/24/01 17:00	05/24/01 16:30	05/24/01 18:00	05/24/01 11:15	05/24/01 12:00	05/24/01 15:05	05/24/01 16:00
Page 3 of 3	Analysis Code 6010W PREP 415.1W TOC 84500EWSO4 8270W	8260W	5 6010W Fe 6010W PREP	5 6010W Fe 6010W PREP	<pre>3 6010W Fe 6010W PREP</pre>	3 6010W Fe 6010W PREP	3 6010W Fe 6010W PREP	3 6010W Fe 6010W PREP	3 6010W Fe 6010W PREF	3 6010W Fe 6010W PREP	3 6010W Fe 6010W PREP
	Type SAMPLE	B-TB	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
	<u>Matrix</u> W	M	м	м	M	м	M	м	м	м	м
05/31/01 04:13 PM	Lab D Client D 81102009 MW-9	81102010 TB-01	81102012 MW-1	81102013 MW-2	81102014 MW-3	81102015 MW-4	81102016 MW-5	81102017 MW-6	81102018 MW-7	81102019 MW-8	81102020 MW-9

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: 845-735-7466 F : 845-735-7466

	Page of		LAB PROJECT #:	5022		10-den 7AT		COMMENTS													COOLER TEMP:	Bent in Co) are net Filthered		
and the second	KECORD	JE TO	PHONE	FAX		2	READERTED ANALYSES	A CONTRACT OF A											*		ADDITIONAL REMARKS:	* I 40 ml temperature Blenk in each cooler	# O'sselved moduls (Jen) are not Filthered		PINK: CLIENT'S COPY
	AIN-OF-CUSTODY REC	INVOICE TO	SAME		(المراجع	9103	A CARE AND													DATE/TIME	1 5.25 090	/ .	/	
	CHAIN-OI		COMPANY 5,	NAME	ADDRESS	CITY/ST/ZIP		* OF CONTRINERS			10 3 2		[0 3 2	10 3 2 1	<u>``</u>			л Х	ч	ч Х	PTED BY	an Umarka			YELLOW: REPORT COPY
	O		PHONE 845 - 7358300		6058		CLIENT P.O.#:	LABID	01	20	03	od	مر	06	62	C.L	09	0		11	ACCE	D lath	•		СОРҮ
	5		PONE	FAX	10965		m								_			×	_	×		0			WHITE: LABORATORY COPY
	vard 86-175 732-349 com		PI	E	ر ح		CLIENT PROJECT #:	WATER	X	×	X	×	\	×	\mathbf{x}	×	x	\times	X	X	IME	5-24011 18:20			BORA
.• — £	Boule nd 028 (401) 7				2		T PRO	CKAB	×	×	X	X	X	X	X	X	X				DATE/TIME	<u>k</u>	`	~	TE: LA
	Center de Isla) • Fax kem@r	RT TO			R'uer.		CLIEP CLIEP	COMPOSITE											-			5-2			IHW
	175 Metro Center Boulevard Warwick, Rhode Island 02886-1755 (401) 732-3400 • Fax (401) 732-3499 email: mitkem@mitkem.com	REPORT TO	Engineers				n SC F	ト DATE/TIME SAMPLED	5-24 / 12:40	5-241 / 13:45	an: 11 / 12-5	5-241 16:30	5-24 / 18:00	S-241 / 17:42	5-24 / 12:00	5-24 / 15.05	5-24/ 16.00	5.24 /	5-24 1	5-241	ISHED BY	ren			
	MITKEM Corporation		COMPANY LMS	NAME ONE Blue	ADDRESS PO BUX 1509	CITY/ST/ZIP	CLIENT PROJECT NAME: Harrison	SAMPLE IDENTIFICATION	mu-1	m-2	Mu- 3	Au-4	S-mw	mu-G	m7	mw.8	mu-9	TB-01	porature Blanks	0-02	ISF# RELINQUI	- Calla-C	2	8	

MITKEM CORPORATION Sample Condition Form

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Received By:	M Reviewed B	· XXX ···			Kurre	EM Proj		Pageo(
Client Project:	HARLISON		Client			EM Proj	ect II:	81107
					ation (p	H	VOA	
Condition:		Lab Sample ID	HNO3	H2SO	HCI	NaOII	Matrix	Comments/Remark
	•	811.0201	12	42	4		UA	Corrective Action
1) Custody Seal(s)	Present / Absent		.68	. 67.	12			
	Coolers / Bottles	63.	ci	·(1	4			
	Intact / Broken	0.1	17	lz	52			
	•	05	(7	1/7	62			
2) Custody Seal Number(s) .	· 06	22	Lz :	Ce.			
	/ .	07	6	47	22			
		68	: 6 4	62	4			
4		11	(1	53	22			
		70	•					
?) Chain-of-Custody	Present / Absent						\forall	
					U.S.			
1) Cooler Temperature								
Coolant Condition	<u> </u>				•	•		
				<u> </u>				
منطناا(s)	E.							
Airbill Number(s)	Not SAVEABLE	•		•				. /
	VAL SHULDONC	· · ·		·				
	•						/	•
-				•			7.	•
٠. •		•	•			1		
) Sample Bottles .	Intact	~				•		•
	Broken	•		•	/.			
	Leaking		·	•./		·	•	•
••	•			<u>/·</u>	•		•	
Date Received	5-25-1.	· ; ;	. /		•			-
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ime Received	· 0916						-	·
· ·		· / : !			-		• •	
🖞 \ Matrix Key:				••			• • •	· · · · ·
Set Unpreserved Soil	M = MeOH	·/	•			•		
A = Unpreserved Aqueou	4				·			
Both MeOH & NaHSO	• /	·		•				
= NaHSO	A=AIR Formi yes (, no)	i	·	·		·		•

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* Volatiles *

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1A EPA SAMPLE NO. VOLATILE ORGANICS ANALYSIS DATA SHEET MW-1

Contract:
SAS No.: SDG No.: 81102
Lab Sample ID: 81102001
Lab File ID: V2E1058
Date Received: 05/25/01
Date Analyzed: 05/30/01
Dilution Factor: 1.0
Soil Aliquot Volume:(uL)
CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q
utyl ether 1 U 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1

EPA SAMPLE NO.

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- 1

Lab Name: MITKEM CORPORATION Con	MW-2
Lab Code: MITKEM Case No.: SA	S No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: 81102002
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1059
Level: (low/med) LOW	Date Received: 05/25/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 05/30/01
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume:(uL)	Soil Aliquot Volume:(uL)
	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q
1634-04-4Methyl tert-butyl 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	ether 1 U 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1 1 U 1

EPA SAMPLE NO.

Lab Name: MITKEM CORPORATION Cont	tract:
Lab Code: MITKEM Case No.: SA	S No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: 81102003
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1060
Level: (low/med) LOW	Date Received: 05/25/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 05/30/01
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume:(uL)	Soil Aliquot Volume:(uL)
	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q
1634-04-4Methyl tert-butyl 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	ether1U2 22 1U 110 120

EPA SAMPLE NO.

Lab Name: MITKEM CORPORATION Cont	tract:
Lab Code: MITKEM Case No.: SAS	S No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: 81102004
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1061
Level: (low/med) LOW	Date Received: 05/25/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 05/30/01
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume:(uL)	Soil Aliquot Volume:(u
	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q
1634-04-4Methyl tert-butyl (71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	ether1 U 1 U 2 1 U 1 U 1 U

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EPA SAMPLE NO.

Lab Name: MITKEM CORPORATION	Contract:
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: 81102005
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1062
Level: (low/med) LOW	Date Received: 05/25/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 05/30/01
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
1634-04-4Methyl tert-but 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	

EPA SAMPLE NO.

Lab Name: MITKEM CORPORATION	Contract:
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: 81102006
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1063
Level: (low/med) LOW	Date Received: 05/25/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 05/30/01
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
1634-04-4Methyl tert-bur 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	1 U 1 U 1 U

EPA SAMPLE NO.

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Lab Name: MITKEM CORPORATION	Contract:
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: 81102007
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1064
Level: (low/med) LOW	Date Received: 05/25/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 05/30/01
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
1634-04-4Methyl tert-bu 71-43-2Benzene	17 17 17

 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

FORM I VOA

	MW-8
Lab Name: MITKEM CORPORATION Contract	
Lab Code: MITKEM Case No.: SAS No	O.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: 81102008
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1065
Level: (low/med) LOW	Date Received: 05/25/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 05/30/01
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume:(uL)	Soil Aliquot Volume:(uL)
	CENTRATION UNITS: /Lorug/Kg) UG/L Q
1634-04-4Methyl tert-butyl eth 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	her1U 1U 1 34 5

EPA SAMPLE NO.

Lab Name: MITKEM CORPORATION Contr	MW-9
Lab Code: MITKEM Case No.: SAS	No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: 81102009
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1066
Level: (low/med) LOW	Date Received: 05/25/01
% Moisture: not dec.	Date Analyzed: 05/30/01
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume:(uL)	Soil Aliquot Volume:(uL)
	NCENTRATION UNITS: g/L or ug/Kg) UG/L Q
1634-04-4Methyl tert-butyl ef 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	ther1 U 1 U 1 U 1 U 1 U 1 U 1 U

EPA SAMPLE NO.

Lab Name: MITKEM COR	PORATION	Contract:		TB-01	
			I		I
Lab Code: MITKEM	Case No.:	SAS No.:	SDG	No.: 81102	
Matrix: (soil/water)	WATER	Lab Samp	ple ID:	81102010	
Sample wt/vol:	5.000 (g/mL) ML	Lab File	e ID:	V2E1067	
Level: (low/med)	LOW	Date Rec	ceived:	05/25/01	
<pre>% Moisture: not dec.</pre>		Date Ana	lyzed:	05/30/01	
GC Column: DB-624	ID: 0.25 (mm)	Dilution	n Facto	r: 1.0	
Soil Extract Volume:	(uL)	Soil Ali	quot V	olume:	(uL)
CAS NO.	COMPOUND	CONCENTRATION (ug/L or ug/Kg			
71-43-2 108-88-3 100-41-4 1330-20-7				1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	

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EPA	SAMPLE	NO.
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VOLATILE ORGANICS ANALYSIS	5 DATA SHEET
Lab Name: MITKEM CORPORATION	Contract:
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: V2B0530A
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1052
Level: (low/med) LOW	Date Received:
<pre>% Moisture: not dec</pre>	Date Analyzed: 05/30/01
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
1634-04-4Methyl tert-but 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	1 U 1 U 1 U

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM (CORPORATION	Contract:	
Lab Code: MITKEM	Case No.:	SAS No.:	SDG No.: 81102

	EPA	SMC1	SMC2	SMC3	OTHER	TOT
	SAMPLE NO.	#	(DCE) #	(TOL)#	(BFB)#	OUT
		**====		======	======	===
01	VBLK2U	108	111	107	98	0
02	VBLK2ULCS	110	111	107	99	0
03	MW-1	109	114	106	98	0
04	MW-2	106	111	105	103	0
05	MW-3	108	113	108	99	0
06	MW-4	103	110	1.04	98	0
07	MW-5	108	113	111	100	0
08	MW-6	106	114	109	99	0
09	MW-7	106	112	107	100	0
10	MW-8	109	115	108	99	0
11	MW-9	107	114	109	97	0
12	TB-01	106	110	107	97	0
13						
14						
15						
16						
17						
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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

page 1 of 1

FORM II VOA-1

FORM 3 WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract: Lab Code: MITKEM Case No.: SAS No.: SDG No.: 81102 Matrix Spike - Sample No.: VBLK2U

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
	********	=================	************	=====	======
Methyl tert-butyl ether	50	0.0.	49	98	62-136
Benzene	50	0.0	52	104	78-121
Toluene	50	0.0	53	106	77-122
Ethylbenzene	50	0.0	53	106	76-120
Xylene (Total)	150	0.0	160	107	76-121
Naphthalene	50	0.0	46	92	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:

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EPA SAMPLE NO.

VOLATILE METHOD BLANK SUMMARY

Lab Name: MITKEM CORPORATIONContract:VBLK2ULab Code: MITKEMCase No.:SAS No.:SDG No.: 81102Lab File ID: V2E1052Lab Sample ID: V2B0530ADate Analyzed: 05/30/01Time Analyzed: 1413GC Column: DB-624ID: 0.25 (mm)Heated Purge: (Y/N) NInstrument ID: V2

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

	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
	=============			*======
01	VBLK2ULCS	V2L0530A	V2E1053	1451
02	MW-1	81102001	V2E1058	1713
03	MW-2	81102002	V2E1059	1742
04	MW-3	81102003	V2E1060	1810
05	MW-4	81102004	V2E1061	1839
06	MW-5	81102005	V2E1062	1908
07	MW-6	81102006	V2E1063	1936
08	MW-7	81102007	V2E1064	2005
09	MW-8	81102008	V2E1065	2033
10	MW-9	81102009	V2E1066	2102
11	TB-01	81102010	V2E1067	2130
12				
13				
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COMMENTS:

MITKEM Corporation

* Semivolatile Organics *

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Lab Name: MITKEM COR	PORATION Contrac	t:
Lab Code: MITKEM	Case No.: SAS No	.: SDG No.: 81102
Matrix: (soil/water)	WATER	Lab Sample ID: 81102002
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID: S1C1705
Level: (low/med)	LOW	Date Received: 05/25/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted:05/29/01
Concentrated Extract	Volume: 500(uL)	Date Analyzed: 06/02/01
Injection Volume:	1.0(uL)	Dilution Factor: 1.0
GPC Cleanup: (Y/N)	N pH:	•
CAS NO.		NTRATION UNITS: or ug/Kg) UG/L Q

91-20-3Naphthalene 10 U 91-57-62-Methylnaphthalene 10 U

EPA SAMPLE NO.

Lab Name: MITKEM COR	PORATION Co	ontract:	MW-3
Lab Code: MITKEM	Case No.: S	SAS No.: SDG	No.: 81102
Matrix: (soil/water)	WATER	Lab Sample ID:	81102003
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID:	S1C1706
Level: (low/med)	LOW	Date Received:	05/25/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted	:05/29/01
Concentrated Extract	Volume: 500 (uL) Date Analyzed:	06/02/01
Injection Volume:	1.0(uL)	Dilution Facto	r: 1.0
GPC Cleanup: (Y/N)	N pH:		
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

L-20-3Naphthalene	4	រ
L-57-62-Methylnaphthalene	10	ប

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: MITKEM CORE	PORATION Contract	MW-4
Lab Code: MITKEM C	Case No.: SAS No.	: SDG No.: 81102
Matrix: (soil/water)	WATER	Lab Sample ID: 81102004
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID: S1C1707
Level: (low/med)	LOW	Date Received: 05/25/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted:05/29/01
Concentrated Extract	Volume: 500(uL)	Date Analyzed: 06/02/01
Injection Volume:	1.0(uL)	Dilution Factor: 1.0
GPC Cleanup: (Y/N)	N pH:	
CAS NO.		NTRATION UNITS: or ug/Kg) UG/L Q

	91-20-3Naphthalene 91-57-62-Methylnaphthalene	- 10 10	-
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EPA SAMPLE NO.

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Lab Name: MITKEM COR	PORATION CC	ontract:	MW-5
Lab Code: MITKEM	Case No.: S	SAS No.: SDG	No.: 81102
Matrix: (soil/water)	WATER	Lab Sample ID:	81102005
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID:	S1C1708
Level: (low/med)	LOW	Date Received:	05/25/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted	l:05/29/01
Concentrated Extract	Volume: 500 (uL) Date Analyzed:	06/02/01
Injection Volume:	1.0(uL)	Dilution Facto	r: 1.0
GPC Cleanup: (Y/N)	N pH:		
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

91-20-3Naphthalene 91-57-62-Methylnaphthalene	10 10	U
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EPA SAMPLE NO.

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Lab Name: MITKEM COR	PORATION	Contract:	MW-6
Lab Code: MITKEM	Case No.:	SAS No.: SDG	No.: 81102
Matrix: (soil/water)	WATER	Lab Sample ID	: 81102006
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID:	S1C1709
Level: (low/med)	LOW	Date Received	: 05/25/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted	1:05/29/01
Concentrated Extract	Volume: 500 (u	L) Date Analyzed:	06/02/01
Injection Volume:	1.0(uL)	Dilution Facto	or: 1.0
GPC Cleanup: (Y/N)	N pH:		
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	

91-20-3Naphthalene	10	บ
91-57-62-Methylnaphthalene	10	บ

FORM I SV-1

1B

EPA SAMPLE NO.

SEMIVOLATILE	ORGANICS	ANALYSIS	DATA	SHEET

Lab Name: MITKEM CORP	ORATION Contrac	::	MW-7
Lab Code: MITKEM C	ase No.: SAS No	SDG NO.	: 81102
Matrix: (soil/water)	WATER	Lab Sample ID: 81	.102007
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID: S1	C1710
Level: (low/med)	LOW	Date Received: 05	/25/01
<pre>% Moisture: </pre>	decanted: (Y/N)	Date Extracted:05	/29/01
Concentrated Extract	Volume: 500 (uL)	Date Analyzed: 06	/02/01
Injection Volume:	1.0(uL)	Dilution Factor:	1.0
GPC Cleanup: (Y/N) M	N pH:		
CAS NO.		ENTRATION UNITS: L or ug/Kg) UG/L	Q

91-20-3Naphthalene 91-57-62-Methylnaphthalene	10 10	
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FORM I SV-1

1B

EPA SAMPLE NO.

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	SEMIVOLATILE	ORGANICS	ANALYSIS	DATA	SHEET
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			MW-8
Lab Name: MITKEM COR	PORATION CON	itract:	
Lab Code: MITKEM	Case No.: SA	AS NO.: SDG	No.: 81102
Matrix: (soil/water)	WATER	Lab Sample ID:	81102008
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID:	S1C1711
Level: (low/med)	LOW	Date Received:	05/25/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted	:05/29/01
Concentrated Extract	Volume: 500(uL)	Date Analyzed:	06/02/01
Injection Volume:	1.0 (uL)	Dilution Facto	r: 1.0
GPC Cleanup: (Y/N)	N рн:		

CAS NO. COMPOUND CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Q

91-20-3Naphthalene 91-57-62-Methylnaphthalene	10 10	
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EPA SAMPLE NO.

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Lab Name: MITKEM CORI	PORATION Contr	ract:	MW-9
Lab Code: MITKEM (Case No.: SAS	No.: SDG	No.: 81102
Matrix: (soil/water)	WATER	Lab Sample ID:	81102009
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID:	S1C1712
Level: (low/med)	LOW	Date Received:	05/25/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted	:05/29/01
Concentrated Extract	Volume: 500(uL)	Date Analyzed:	06/03/01
Injection Volume:	1.0(uL)	Dilution Facto	r: 1.0
GPC Cleanup: (Y/N)	N pH:	•	
CAS NO.		NCENTRATION UNITS: g/L or ug/Kg) UG/L	Q

91-20-3Naphthalene	2 J
91-57-62-Methylnaphthalene	10 U

FORM I SV-1

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: MITKEM CORPORATION	Contract: SBLK1C
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81102
Matrix: (soil/water) WATER	Lab Sample ID: S0529-BW1
Sample wt/vol: 1000 (g/mL) M	L Lab File ID: S1C1700
Level: (low/med) LOW	Date Received:
<pre>% Moisture: decanted: (Y/N)</pre>) Date Extracted:05/29/01
Concentrated Extract Volume: 1000	0(uL) Date Analyzed: 06/02/01
Injection Volume: 1.0(uL)	Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _	
	CONCENTRATION UNITS.

CAS NO. COMPOUND

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Q

91-20-3Naphthalene 91-57-62-Methylnaphthalene	10 10	-

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name:	MITKEM	CORPORATION	Contract:	
Lab Code:	MITKEM	Case No.:	SAS No.:	SDG No.: 81102

	EPA	<u> </u>	S2	S 3	S4	S5	S6	S7	S8	TOT
	SAMPLE NO.	(NBZ)#	#	#	#	#	#	. #	#	OUT
	=======================================	======	=====	======	=====	======	======	======	======	===
01		71								0
02	SBLK1CLCS	78								0
03	MW-1	64								0
04	MW-2	66								0
05	MW-3	66				· · ·				0
06	MW-4	67								0
07	MW-5	71								0
80	MW-6	54								0
09	MW-7	66								0
10	MW-8	60								0
11	MW-9	72								0
12										
13										
14										
15										
16										
17										
18										
19										
20										
20 21 22										
22									-	
23										
24										
25										
26										
27										
28										
29										
30										

S1 (NBZ) = Nitrobenzene-d5

QC LIMITS (38-119)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM II SV-1

FORM 3 WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITK	EM CORPORATION	Contract:	
Lab Code: MITK	EM Case No.:	SAS No.:	SDG No.: 81102

Matrix Spike - Sample No.: SBLK1C

COMPOUND	SPIKE	SAMPLE	LCS	LCS	QC.
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
	(ug/L)	(ug/L)	(ug/L)	REC #	REC.
Naphthalene 2-Methylnaphthalene	50 50	0.0 0.0	38 40	====== 76 80	===== 50-105 50-107

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 2 outside limits

COMMENTS:



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* Metals *

NYSDEC - ASP

NYSDEC SAMPLE NO.

		INORGAN	N I SDEC	SAMPLE NO.			
Lab Name:	MITKEM_CO	MW-1					
_Lab Code:	MITKEM	Case No.:	SAS N	No.:	SDG No.:	81102	
Matrix (soil/water):		WATER_		Lab Sample ID:	D81102	.001	
Level (low/med):		MED		Date Received:	05/25/0	1	
% Solids:							
	Concentration I	Units (ug/L or mg/kg dry	weight):	UG/L			

CAS No.	Analyte	Concentration	C	Q	М
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				
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				
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

Colo	r Re	fore:
0010		

.

Clarity Before:

Clarity After:

Texture:

Artifacts:

Color After:

Comments:

DISSOLVED_METALS_FOR_MW-1_____

10/95

							MW	` 1
Name:	MITKEM_C	ORPORATION	Cont	ract:				- <u>_</u>
Code:	MITKEM	Case No.:		SAS No.:			SDG No.:	81102_
trix (soil/w	vater):	WATER_		L	ab Samp	ole ID:	T81102	002
el (low/m	ed):	MED		Ľ	Date Reco	eived:	05/25/0	1
Solids:								
	Concentration	Units (ug/L or mg	/kg dry weight):				UG/L	
	CAS No.	Analyte	Concentration	• C	Q	М		
	_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	6330			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						
	7440-28-0	Thallium						
	_7440-62-2 7440-66-6	Vanadium Zinc				NR NR		
		Cyanide						
or Before:			Clarity Before:				Texture:	
			-					
or After:		Clari	ty After:				Artifacts:	
nments:								

,

			INORG	NYSDEC - ASP l GANIC ANALYSIS DA		NYSDEC SAMPLE NO.	
:	Lab Name: MITKEM_CORPORATION Contract:						-2
-	Lab Code:	MITKEM	Case No.:	SAS	No.:	SDG No.:	81102
1194	Matrix (soil/wa	iter):	WATER_		Lab Sample ID:	D81102	002
	Level (low/med):		l (low/med): MED		Date Received:	05/25/0	1
	% Solids:						
	Concentration Units (ug/L or mg/kg dry weight):						
	ſ				•		

Concentration

С

Q

M

NR

P

NR

NR

NR

NR

CAS No.

7429-90-5

7440-36-0

7440-38-2

7440-39-3

7440-41-7

7440-43-9

7440-70-2

7440-47-3

7440-48-4

7440-50-8

7439-89-6

7439-92-1

7439-95-4

7439-96-5

7439-97-6

Analyte

Aluminum

Antimony

Beryllium

Cadmium

Calcium

Cobalt

Copper

Iron

Lead

Chromium

Magnesium

Manganese

Mercury

Arsenic

Barium

	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:		C	larity Before:		Texture:	
Color After:		Clarity	After:		Artifacts	:
Comments: DISS	SOLVED_META	LS_FOR_MW-2				

	NYSDEC - ASP 1 INORGANIC ANALYSIS DATA SHEET					NYSDEC SAMPLE NO.	
Lab Name:	MITKEM_CO	ORPORATION		Contract:		MW	-3
Lab Code:	MITKEM	Case No.:		SAS No	.:	SDG No.:	81102
Matrix (soil/w	vater):	WATER_			Lab Sample ID:	T81102	003

Level (low/med): MED Date Received:

M% Solids:

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

UG/L

.

05/25/01

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum		_		NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				
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	8880			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				N R
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Clarity Before:

Clarity After:

Color Before:

Color After:

Texture:

Artifacts:

Comments:

	NYSDEC SAMPLE NO.				
Lab Name: MITKEM_CO		PRPORATION	Contract:	MW-3	
Lab Code:	MITKEM	Case No.:	SAS No.:	SDG No.: 81102	
Matrix (soil/w	ater):	WATER_	Lab Sample ID:	D81102003	
Level (low/me	:d):	MED	Date Received:	05/25/01	
% Solids:					

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

CAS No. Analyte Concentration С Q Μ 7429-90-5 NR Aluminum 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 2410 7439-89-6 Ρ Iron NR 7439-92-1 Lead Magnesium 7439-95-4 NR 7439-96-5 Manganese NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-09-7 NR Potassium 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:	
		_METALS_FOR	_MW-3	 	
-					

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UG/L

5		INC	NYSDEC - 1 RGANIC ANALYSI		SHEET		NYSDEC SAMPLE NO	
	MITTEN		ORGANIC ANALYSIS DATA SHEET Contract:				MW-4	
Lab Name:	MITKEM_C	ORPORATION		uact.				
Lab Code:	MITKEM	Case No.:		SAS No.:			SDG No.: 81102	
Matrix (soil/v	vater):	WATER_			Lab Samp	ole ID:	T81102004	
Level (low/m	ed):	MED			Date Rece	eived:	05/25/01	
% Solids:								
	Concentration	Units (ug/L or mg	/kg dry weight):				UG/L	
					•			
	CAS No.	Analyte	Concentration	с	Q .	м		
	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	Соррег				NR		
	7439-89-6	Iron	1360			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		
						NR		
	7440-22-4	Silver				141		
	7440-22-4 7440-23-5	Sodium						

Color Bef	ore:	Clarity I	Before:	Textu	re:
Color Aft	er:	Clarity After	:	Artifac	cts:
Comment	s:				
•					
-					

NR NR

7440-66-6

Vanadium Zinc_ Cyanide_

		INORG	SDEC - ASP 1 ALYSIS DATA	SHEET	NYSDEC	SAMPLE NO
Lab Name:	MITKEM_CO	RPORATION	 Contract:		MW-	4
Lab Code:	MITKEM	Case No.:	 SAS No).:	SDG No.:	81102
Matrix (soil/w	ater):	WATER_		Lab Sample ID:	D811020	004
Level (low/me	:d):	MED		Date Received:	05/25/01	
% Solids:						

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

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	1010			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_MV	V-4	

		INO	NYSDEC 1 RGANIC ANALYS		HEET		NYSDEC	SAMPLE NO
Lab Name:	MITKEM_C	ORPORATION	Co	ntract:			MW	-5
Lab Code:	MITKEM	Case No.:		SAS No.:			SDG No.:	81102
Matrix (soil/v	water):	WATER_		I	.ab Samp	ole ID:	T81102	005
Level (low/m	ed):	MED		Γ	Date Rece	eived:	05/25/0	1
% Solids:								
	Concentration	Units (ug/L or mg/	kg dry weight):				UG/L	
	CAS No.	Analyte	Concentration	с	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	9630			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 Cyanide				NR NR		
Color Before:		ſ	Clarity Before:				Texture:	
-			-					
Color After:		Clarit	ty After:				Artifacts:	
Comments:								
			FORM I -	· IN				10/95

NYSDEC	- ASP
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NYSDEC SAMPLE NO.

t		INORGANIC ANALYSIS DATA SHEET					NYSDEC SAMPLE NO.		
Lab Name:	MITKEM_CORPO	DRATION		Contract:		MW-	5		
Lab Code:	MITKEM	Case No.:		SAS No.	.:	SDG No.:	81102		
Matrix (soil/wat	er):	WATER			Lab Sample ID:	D811020	005		
Level (low/med)):	MED			Date Received:	05/25/01	l		
% Solids:									

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

UG/L

CAS No.	Analyte	Concentration	C	Q	Μ
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	2930			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				
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before:

Clarity Before:

Clarity After:

Texture:

Artifacts:

Color After:

Comments:

DISSOLVED_METALS_FOR_MW-5_____

			NYSI	DEC - ASP 1 LYSIS DATA	SHEET	NYSDEC SAM	PLE NO.
	Lab Name:	MITKEM_CORPO	DRATION	Contract:		MW-6	
Ì	Lab Code:	MITKEM	Case No.:	SAS No.	:	SDG No.: 811	02
	Matrix (soil/wate	er):	WATER_		Lab Sample ID:	T81102006	
-	Level (low/med)	÷	LOW		Date Received:	05/25/01	
	% 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				N R
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	1720			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				\Box 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				\exists NR
	Cyanide				NR

Color Be	fore:	 Clarity Before:	 Texture:	
Color Af	ter:	 Clarity After:	 Artifacts:	
Commen	ts:			
-		 	 	

10/95

NYSDEC -	ASP
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1

NYSDEC SAMPLE NO.

		NYSDEC SAMPLE NO.		
Lab Name:	MITKEM_CO	PRPORATION	Contract:	MW-6
Lab Code:	MITKEM	Case No.:	SAS No.:	SDG No.: 81102
Matrix (soil/w	vater):	WATER_	Lab Sample ID:	D81102006
Level (low/me	ed):	MED	Date Received:	05/25/01
% Solids:				

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

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	475			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		 	

NYSDEC - ASP

1

NYSDEC SAMPLE NO.

	1		INORGANIC ANA	ALYSIS DATA	SHEET	NYSDEC S	SAMPLE NO.
	Lab Name:	MITKEM_CORPO	DRATION	Contract:		MW-7	7
_	Lab Code:	MITKEM	Case No.:	SAS No	o.:	SDG No.:	81102
	Matrix (soil/wate	er):	WATER_		Lab Sample ID:	T811020	07
10.00	Level (low/med)):	MED		Date Received:	05/25/01	
	% Solids:						

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

CAS No.	Analyte	Concentration	С	Q	М
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	2700			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				<u>NR</u>
	Cyanide				NR

Color Bet	fore:	 Clarity Before:	 Texture:	
Color Aft	ter:	 Clarity After:	 Artifacts:	
Comment	ts:			

NYSDEC - ASP

I INORGANIC ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

-						MW-	7
Lab Name: MITKEM_CORPORATION		 Contract:					
	Lab Code:	MITKEM	Case No.:	 SAS No.	.:	SDG No.:	81102
	Matrix (soil/wat	er):	WATER_		Lab Sample ID:	D811020	007
	Level (low/med)):	MED		Date Received:	05/25/01	
	% Solids:						

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

CAS No.	Analyte	Concentration	C	Q	М
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	1880			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	 	
)		 	

NYSDEC - ASP

1

NYSDEC SAMPLE NO.

			INOF	INORGANIC ANALYSIS DATA SHEET			NYSDEC SAMPLE NC	
	Lab Name:	MITKEM_CORP	ORATION		Contract:		MW	-8
	Lab Code:	MITKEM	Case No.:		SAS No	.:	SDG No.:	81102
	Matrix (soil/wat	er):	WATER_			Lab Sample ID:	T811020	008800
-	Level (low/med)):	MED			Date Received:	05/25/01	l
	% 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				TNR
7440-38-2	Arsenic				TNR
7440-39-3	Barium				N R
7440-41-7	Beryllium			_	TNR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				∏N R
7440-48-4	Cobalt				N R
7440-50-8	Copper				NR
7439-89-6	Iron	545			T P
7439-92-1	Lead				NR
7439-95-4	Magnesium				N R
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				INR
	Cyanide				NR

Color Before:	 Clarity Before:	 Texture:	
Color After:	 Clarity After:	 Artifacts:	
Comments:			

5

		INORGA	NYSDEC - ASP l INORGANIC ANALYSIS DATA SHEET			NYSDEC SAMPLE NO.		
	Lab Name:	MITKEM_CORP	ORATION	Cc	ontract:		MW-	8
	Lab Code:	MITKEM	Case No.:		SAS No	.:	SDG No.:	81102
Ù	Matrix (soil/wa	ter):	WATER_			Lab Sample ID:	D81102	008800
	Level (low/med):		MED		Date Received:	05/25/01		
	% Solids:							
		Concentration Uni	ts (ug/L or mg/kg d	lry weight):			UG/L	

С Q Μ CAS No. Analyte Concentration 7429-90-5 NR Aluminum NR 7440-36-0 Antimony NR 7440-38-2 Arsenic NR 7440-39-3 Barium NR Beryllium 7440-41-7 7440-43-9 Cadmium NR Calcium NR 7440-70-2 NR 7440-47-3 Chromium NR Cobalt 7440-48-4 NR 7440-50-8 Copper 25.0 U Ρ 7439-89-6 Iron NR 7439-92-1 Lead Magnesium NR 7439-95-4 NR 7439-96-5 Manganese 7439-97-6 NR Mercury NR 7440-02-0 Nickel NR Potassium 7440-09-7 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 7440-66-6 Zinc NR NR Cyanide

Color Before:		Clarity Before:	 Texture:	
Color After:		Clarity After:	 Artifacts:	
Comments: DISS	OLVED_METALS_FOR_	_MW-8	 	

		SDEC - ASP 1 ALYSIS DATA SHI	EET	NYSDEC	SAMPLE NO.
MITKEM_CO		Contract:		MW-	-9
MITKEM	Case No.:	SAS No.:		SDG No.:	81102

Lab Sample ID:

Date Received:

% Solids:

Lab Name:

Lab Code:

Matrix (soil/water):

Level (low/med):

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

WATER_

MED____

UG/L

T81102009

05/25/01___

CAS No.	Analyte	Concentration	C	Q	Μ
7429-90-5	Aluminum				NR
7440-36-0	Antimony				N R
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	4570			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				
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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NYSDEC - ASP
1
INORGANIC ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

						MW-	.9
· .	Lab Name:	MITKEM_CORP	ORATION	Contract:			
	Lab Code:	MITKEM	Case No.:	SAS No	o.:	SDG No.:	81102
- 5	Matrix (soil/wate	er):	WATER_		Lab Sample ID:	D81102	009
-	Level (low/med)	:	MED		Date Received:	05/25/01	l

% Solids:

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NF
7440-36-0	Antimony				NF
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-9		

NYSDEC - ASP 3 BLANKS

-	Lab Name:	MITKEM_CORPORA	ATION	Contract:			
i Î	Lab Code:	MITKEM	Case No.:	SAS No.:		SDG No.:	81102
	Preparation Blar	nk Matrix (soil/water):		WATER			
à.	Preparation Blar	nk Concentration Units	(ug/L or mg/kg):		UG/L		

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

NYSDEC - ASP 3 BLANKS

	Lab Name:	MITKEM_CORPOR	ATION	Contract:			
	Lab Code:	MITKEM	Case No.:	SAS No.:		SDG No.:	81102
r	Preparation Bla	nk Matrix (soil/water):		WATER			
A grade Tak	Preparation Bla	nk Concentration Units	(ug/L or mg/kg):		UG/L		

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

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NYSDEC - ASP 7 LABORATORY CONTROL SAMPLE

	Lab Name:	MITKEM_COR	RPORATION	Contract:	 -	
	Lab Code:	MITKEM	Case No.:	 SAS No.:	 SDG No.:	81102
	Solid LCS Source:					
			HIGH PURITY			

	Ααι	ieous (ug/L)				Solid (mg/kg)		
Analyte	True	Found	%R	True	Found	c	Limits	%F
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron	4550.0	4739.8	104.2					
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

6

NYSDEC - ASP 7 LABORATORY CONTROL SAMPLE

	Lab Name: MITKEM_CORPORATION			Contract:		_		
	Lab Code:	MITKEM	Case No.:		SAS No.:		SDG No.:	81102
ð: Ö	Solid LCS Sour	ce:						
	Aqueous LCS Source:		HIGH_PURITY_					

.

	Aqueous (ug/L)							
Analyte	True	Found	%R	True	Found	Solid (mg/kg) C	Limits	%F
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron	4550.0	4711.4	103.5					
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								



* Wet Chemistry *

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Client: Client ID: Lab ID:	LMS Engineers MW-1 81102001	Matrix: Aqueous	

		Reporting			Analysis	Analysis
Analyte	<u>Results</u>	Limit		Units	Method	Date
Free CO2	59	10		· mg/L	SM 4500-CO2D	5/25/01
Nitrate-N	11	4	*	mg/L	EPA 353.2	5/29/01
Sulfates	13	7		mg/L	SM 4500-SO4 E	5/31/01
TOC	9	5		mg/L	EPA 415.1	6/1/01

* Elevated due to sample matrix effects.

Page 1 of 1

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Client: Client ID: Lab ID:	LMS Engineers MW-2 81102002		Matrix: Aqueous	
		Reporting	Analysis	Analysis

				7 mary 010	711019313
Analyte	<u>Results</u>	Limit	Units	Method	Date
Free CO2	49	10	• mg/L	SM 4500-CO2D	5/25/01
Nitrate-N	ND	4 *	mg/L	EPA 353.2	5/29/01
Sulfates	14	7	mg/L	SM 4500-SO4 E	5/31/01
TOC	17	5	mg/L	EPA 415.1	6/1/01

ND = Not Detected

* Elevated due to sample matrix effects.

Page 1 of 1



Client: Client ID: Lab ID:	LMS Engineers MW-3 81102003					Matrix: Aqueous	
Analyte		<u>Results</u>	Reporting Limit		Units	Analysis <u>Method</u>	Analysis <u>Date</u>
Free CO2 Nitrate-N Sulfates TOC		48 ND 18 27	10 4 7 5	•	· mg/L mg/L mg/L mg/L	SM 4500-CO2D EPA 353.2 SM 4500-SO4 E EPA 415.1	5/25/01 5/29/01 5/31/01 6/1/01

ND = Not Detected

* Elevated due to sample matrix effects.



Client: Client ID: Lab ID:	LMS Engineers MW-4 81102004					Matrix: Aqueous	
			Reporting			Analysis	Analysis
Analyte		Results	<u>Limit</u>		Units	Method	Date
Free CO2		55	10		· mg/L	SM 4500-CO2D	5/25/01
Nitrate-N		ND	4	*	mg/L	EPA 353.2	5/29/01

7

5

mg/L

mg/L

SM 4500-SO4 E

EPA 415.1

15

14

ND = Not Detected

Sulfates

TOC

* Elevated due to sample matrix effects.

5/31/01



Client: Client ID: Lab ID:	LMS Engineers MW-5 81102005					Matrix: Aqueous	
Analyte		<u>Results</u>	Reporting Limit		Units	Analysis <u>Method</u>	Analysis Date
Free CO2 Nitrate-N Sulfates		68 ND 17	10 4 7	*	· mg/L mg/L mg/L	SM 4500-CO2D EPA 353.2 SM 4500-SO4 E	5/25/01 5/29/01 5/31/01

5

mg/L

EPA 415.1

23

ND = Not Detected

TOC

200

* Elevated due to sample matrix effects.



Client: Client ID: Lab ID:	LMS Engineers MW-6 81102006		Matrix: Aqueous	
		Reporting	Analysis	An

		Reporting			Analysis	Analysis
Analyte	<u>Results</u>	Limit		Units	Method	<u>Date</u>
Free CO2	60	10		' mg/L	SM 4500-CO2D	5/25/01
Nitrate-N	ND	8	*	mg/L	EPA 353.2	5/29/01
Sulfates	17	7		mg/L	SM 4500-SO4 E	5/31/01
TOC	17	5		mg/L	EPA 415.1	6/1/ 01

ND = Not Detected

1

* Elevated due to sample matrix effects.

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Client: Client ID: Lab ID:	LMS Engineers MW-7 81102007					Matrix: Aqueous	
			Reporting			Analysis	Analysis
Analyte		<u>Results</u>	Limit		Units	Method	Date
Free CO2		78	10		mg/L	SM 4500-CO2D	5/25/01
Nitrate-N		ND	8	*	mg/L	EPA 353.2	5/29/01

7

5

15

16

mg/L

mg/L

SM 4500-SO4 E

EPA 415.1

ND = Not Detected

Sulfates

тос

* Elevated due to sample matrix effects.

8110200**7** 7 ()

5/31/01



Client: Client ID: Lab ID:	LMS Engineers MW-8 81102008					Matrix: Aqueous	
Analyte		<u>Results</u>	Reporting Limit		<u>Units</u>	Analysis Method	Analysis <u>Date</u>
Free CO2 Nitrate-N Sulfates TOC		37 ND 31 21	10 8 7 5	*	' mg/L mg/L mg/L mg/L	SM 4500-CO2D EPA 353.2 SM 4500-SO4 E EPA 415.1	5/25/01 5/29/01 5/31/01 6/1/01

ND = Not Detected

* Elevated due to sample matrix effects.

Page 1 of 1



Client: Client ID: Lab ID:	LMS Engineers MW-9 81102009					Matrix: Aqueous	
Analyte		<u>Results</u>	Reporting Limit		Units	Analysis <u>Method</u>	Analysis Date
Free CO2 Nitrate-N Sulfates		ND ND 21	10 4 7	×	' mg/L mg/L mg/L	SM 4500-CO2D EPA 353.2 SM 4500-SO4 E	5/25/01 5/29/01 5/31/01

5

18

ND = Not Detected

TOC

* Elevated due to sample matrix effects.

81102009 7:

EPA 415.1

6/1/01

mg/L



Client: Client ID:	LMS Engineers				Matrix: Aqueous	
Lab ID:	Prep Blank					
			Reporting		Analysis	Analysis
Analyte		<u>Results</u>	<u>Limit</u>	<u>Units</u>	Method	Date

Free CO2	ND	10	. mg/L	SM 4500-CO2D	5/25/01
Nitrate-N	ND	0.08	mg/L	EPA 353.2	5/29/01
Sulfates	ND	7	mg/L	SM 4500-SO4 E	5/31/01
тос	ND	5	mg/L	EPA 415.1	6/1/01

ND = Not Detected



Client:LMS EngineersMatrix: AqueousClient ID:Lab Control Sample

Analyte	% Recovery	Analysis <u>Method</u>	Analysis <u>Date</u>
Free CO2	100	SM 4500-CO2D	5/25/01
Nitrate-N	102	EPA 353.2	5/29/01
Sulfates	87	SM 4500-SO4 E	5/31/01
TOC	106	EPA 415.1	6/1/01

Last Page of Data Report

7:

Last Page of Data Report

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"Environmental Testing For The New Millennium"

June 26, 2001

4

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

RE: Client Project: Harrison SVE, 446-173 Mitkem Lab Project # 81125

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

~ Sincere Hen

Edward A. Lawler Laboratory Operations Manager

Environmental Chemistry Section

JUN 2 7 2001

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

Project Name: NYSDOT Harrison SVE

SDG: 81125

			A	nalytical Rec	uirements	
Customer Sample Code	Laboratory Sample Code	VOA GC/MS <u>Method #</u>	BNA GC/MS <u>Method #</u>	Pest PCBs <u>Method #</u>	Metals	Other
LF-TP-2	81125001	8260				
Eculson	\$1125002	8240	·			
SP-1	81125003	8260	8270		4010	see losinsheet
SP-1B	81125004	8260	8270		1010	see losinsheet
sp-2	81125005	8260	8270		6010	see login sheet
5p-3	81125006	82100	8270		6010	see login sheet
SP-4	81125007	8240	8270		10010	see login sheet
TB-3	81125008	82110	-tra state			
SP-1	81125009		1		6010	••
5P-1B	81125010				1010	
59-2	81125011				6010	
SP-3	81125012				6010	
SP-4 SPidendan	81125013				1010	·
			· · ·			

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Volatile (VOA) Analyses

Project Name: NYSDOT Harrison SVE

SDG: 81125

41

Laboratory Sample ID	Matrix	Date <u>Collected</u>	Date Received <u>at Lab</u>	Date <u>Extracted</u>	Date Analyzed
81125001	Aq	oslasloi	05/20101		4/1/01
81125002					
81125003					
81122004					
81125005					
8125006					
81125007				.	
8112-5008	V	V	/¥	• •	

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Semivolatile (BNA) Analyses

Project Name: NYSDOT Harison SVE

SDG: 81125

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Laboratory <u>Sample ID</u>	Matrix	Date <u>Collected</u>	Date Received <u>at Lab</u>	Date Extracted	Date Analyzed
81125003	Aq	0=125/01	05/24/61	6/1/0/	6 20 01
81125004			· · ·		
81125005					
81125004					
81125007					V
			1.20		
					•

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Volatile (VOA) Analyses

Project Name: NYSDOT Harrison SVE

SDG:8125

Laboratory Sample ID	Matrix	Analytical Protocol	Extraction <u>Method</u>	Low/Med. <u>Level</u>	Dil./Conc. <u>Factor</u>
81125601	Aq	8260		L	1
81125002		· 			
81125003					
81125004					
RIUSOOS					
81125006					
81125007					
81125008	\downarrow	\downarrow	*	\checkmark	d

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Semivolatile (BNA) Analyses

Project Name: NYSDOT HarrisonSIE

SDG: 81125

Laboratory Sample ID	Matrix	Analytical <u>Protocol</u>	Extraction <u>Method</u>	Auxiliary <u>Cleanup</u>	Dil/Conc <u>Factor</u>
81125003	Ang	8270	3510		
81125004			· ·		
81125005					
81125006					
81235007	\mathbf{V}	V	V	d	•
			1		
-			,		
		-			
•					

New York State Department of Environmental Conservation

Sample Preparation and Analyses Summary Inorganic Analyses

Project Name: NYSDOT Harrison SVE

SDG: 81125

Laboratory Sample ID	Matrix	Metals Requested	Date Received <u>at Lab</u>	Date Analyzed
81125003	A-8	6010	ostacion	6/9/01
8165004				
81125005		· · · · · · · · · · · · · · · · · · ·		
81125000				
81125007				
81125009				
8125010				
81125011		and the second s		
81125012				
81125013				
	-	· ·		

Analytical Data Package for LMS Engineers

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Client Project: Harrison SVE, 446-173

SDG# 81125

Mitkem Project ID: 81125

June 26, 2001

SDG Narrative

., :

Mitkem Corporation submits the enclosed data package in response to LMS Engineers' Harrison SVE project number 446-173. Under this deliverable, analysis results are presented for eight aqueous samples that were received on May 25, 2001 and assigned Laboratory Number 81125. 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:

Lab ID	<u>Analysis</u>
81125001	V
81125002	v
81125003	V, M, S, W
81125004	V, M, S, W
81125005	V, M, S, W
81125006	V, M, S, W
81125007	V, M, S, W
81125008	v
	81125001 81125002 81125003 81125004 81125005 81125006 81125007

V = Volatile Organics – NYSDEC ASP Method 8260B (selected compounds/certain samples)

S = Semivolatile Organics – NYSDEC ASP Method 8270C (selected compounds only) M = Metals (TAL List) – NYSDEC ASP Methods 6010B (total and dissolved iron only) W = Wet Chemistry Parameters, including nitrate/nitrite, free CO2, total organic carbon, sulfate

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category A deliverable.

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:

Several samples were analyzed using a full list of compounds, while selected samples were analyzed using a shorter list of compounds. Sample results are reported to a nominal 1ppb level for all compounds with the exception of acetone, which is reported to

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2ppb. 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. Semivolatile Organic Analysis:

Samples were analyzed for two compounds only, naphthalene and 2-methyl naphthalene.

Surrogate recovery: recoveries were within the QC limits. Please note only the closest surrogate standard is reported for the short list of two target compounds.

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

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

4. Metals Analysis:

A separate aliquot of each sample was filtered and acid-preserved upon receipt at the laboratory. These are reported as dissolved metals, with the unfiltered aliquot reported as total metals.

Lab control sample: spike recoveries were within the QC limits

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

5. Wet Chemistry Analyses:

Samples were analyzed for nitrate/nitrite (EPA 353.2), free CO2 (SM4500-CO2C), total organic carbon (EPA 415.1) and sulfate (SM4500-SO4E).

The reporting limits for nitrate/nitrite are elevated due to sample matrix interference caused by the color of the samples. 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 occurrence was noted during sample analysis.

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.

.. :

(a)

Edward A. Lawler Laboratory Operations Manager 6/26/01

Sample Transmittal Documentation

		Lab Workorder #: 81125								 	
a rain and a second		Lab Wo	$\left\langle \mathcal{M}\right\rangle$	29/01 14:29 9/01 14:37			<u>Notes</u> Report TCL VOCs at 1 ug/L	Report TCL VOCs at 1 ug/L			
			Logged In By: Reviewed By:	Date Opened: 05/29/01 14:29 Date Closed: 05/29/01 14:37	Project Status: WP		Due Due 06/11/01 R	06/11/01 R	06/11/01	10/11/90	10/11/01
	LION	Revision #2	Logg	Date	Proje	thelene only	<u>Received</u> 05/26/01	02/26/01	05/26/01	05/26/01	05/26/01
and the second	CORPORATIO	Rev				& 2 methylnapt	<u>Collected</u> 05/25/01 17:40	05/25/01 15:55	05/25/01 11:25	05/25/01 12:40 05/26/01	05/25/01 14:05
	MITKEM CO	Page 1 of 2				8260 BTEX/MTBE+Napthalene at 1 ug/L,8270 Napthalene & 2 methylnapthelene only R1: Add 8270 to samples 003-007. R2: Add note to 08	<u>Analvsis Code</u> 8260W	8260W	8260W 353.2W NO2 84500WFCO2 6010W Fee 6010W PREP 415.1W TOC 84500EWSO4 8270W	8260W 353.2W NO2 S4500WFCO2 6010W Fe 6010W PREP 415.1W TOC S4500EWSO4 8270W	8260W 353.2W NO2 S4500WFCO2 6010W Fe 6010W PREP 415.1W TOC S4500EWSO4 8270W
			celly Eng. .173	Æ		apthalene a les 003-007.	<u>Matrix</u> <u>Type</u> W SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
		Wo	81125 RO Lawler, Matusky & Skelly Eng. HARRISON SVE 446-173 446-173 NA	Project / Profile Name: NYSDOT Harrison SVE Date Due: 06/11/01	ASP A (2 copies)	8260 BTEX/MTBE+Napthalene at 1 ug/L,8270 Napt R1: Add 8270 to samples 003-007. R2: Add note to 08	<u>Matri</u> W	M	3	*	≥
		06/01/01 05:21 PM	Lab Workorder Client: Lab Workorder ID: Client Proj ID: Client DO #-	Project / Profile Name Date Due: Customer Service:	Del Req'd: Completed?:	Profile Notes: Project Notes:	Lab ID Client ID 81125001 LF-TP-2	81125002 LF-TP-1	81125003 SP-1	81125004 SP-1B	81125005 SP-2

		Lab Workorder #: 81125						•	a †		
		Lab Wor			06/11/01 Report TCL VOCs at 1 ug/L	DISSOLVED IRON	OLVED IRON	OLVED IRON	OLVED IRON	OLVED IRON	
			Due Notes 06/11/01	10/11/90	06/11/01 Repo	06/11/01 DISS	06/11/01 DISSOLVED IRON	06/11/01 DISSOLVED IRON	06/11/01 DISSOLVED IRON	06/11/01 DISSOLVED IRON	
	ATION	Revision #2	Received 5:25 05/26/01	7:00 05/26/01	2:00 05/26/01	1:25 05/26/01	2:40 05/26/01	4:05 05/26/01	5:25 05/26/01	7:00 05/26/01	
- 12 1	EM CORPORATION		Collected 05/25/01 15:25	05/25/01 17:00	05/25/01 12:00	05/25/01 11:25	05/25/01 12:40	05/25/01 14:05	05/25/01 15:25	05/25/01 17:00	
	XI	Page 2 of 2	Analysis Code 8260W 353.2W NC2 S4500WFCO2 6010W Fre 6010W PREP 415.1W TOC S4500EWSO4 8270W	8260W 353.2W NO2 84500WFCO2 6010W Fe 6010W PREP 415.1W TOC 84500EWSO4 8270W	8260W	6010W Fe 6010W PREP	6010W Fe 6010W PREP	6010W Fe 6010W PREP	6010W Fe 6010W PREP	6010W Fe 6010W PREP	
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		V	₩ N	≥	M	M	M	M	M	×	r T GO TO: X 150 ng.com
A martine of the second se		06/01/01 05:21 PM	Lab ID Client ID 81125006 SP-3	81125007 SP-4	81125008 TB-3	81125009 SP-1	81125010 SP-1B	81125011 SP-2	81125012 SP-3	81125013 SP-4	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: 845-735-7466 F: 845-735-7466

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LMS Enclosed Prove LMS Enclosed Prove LMS 7.n. Aller H.I. Ph. t. Examinent is Examinent is <td< td=""><td>Encircle ISPHONE $\mathcal{G}(\mathcal{F}_{13}, \mathcal{C}_{2})$$H:II$$PI_{1-1}$$FAX$$PI_{1}$$PI_{1-1}$$PI_{1}$$PI_{1-1}$$PI_{1}$$PI_{1-1}$$PI_{1}$$PI_{1-1}$$PI_{2}$</td><td>COMPANY SAME PHONE PHONE NAME FAX</td></td<>	Encircle ISPHONE $\mathcal{G}(\mathcal{F}_{13}, \mathcal{C}_{2})$ $H:II$ PI_{1-1} FAX PI_{1} PI_{1-1} PI_{1} PI_{1-1} PI_{1} PI_{1-1} PI_{1} PI_{1-1} PI_{2}	COMPANY SAME PHONE PHONE NAME FAX
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~ 10:00 Cm 5-2501 18:00 2 20 2 20 - 10:00	KELINQUISHED BY DATE/TIME AG	DATE/TIME ADDITIONAL REMARKS:
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MITKEM CORPORATION Sample Condition Form

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Client Project:			VE 446-17	13	Clion	<u>- 1</u>	n s	EM Pro	ed #:	81125
Condition:						Preserv	$\frac{1}{2}$			•
			Lab Sample IC)	HNO,	H2SO	HCI	NaOH	VOA	Comments/Remark
		2	811250				1	1		Corrective Action
1) Custody Seal(s)	Present / Absept	Ľ	102	-	•				UB-	· · ·
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2) Custody Seal Number(s	3)		. Of		67	22	-		_UA	
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e Sample Notification For	m yes/no			<u> </u>				<u> </u>		•
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* Volatiles *





1A VOLATILE ORGANICS ANALYSIS DATA SHEET

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Lab Name: MITKEM CORP	ORATION	Contract:		L	F-TP-2	
Lab Code: MITKEM C	ase No.:	SAS No.:	SDG	No.:	81125	
Matrix: (soil/water)	WATER	Lab	b Sample ID	: 8112	5001	
Sample wt/vol:	5.000 (g/mL) ML	Lak	b File ID:	V2E1	125	
Level: (low/med)	LOW	Dat	te Received	: 05/2	6/01	
% Moisture: not dec.		Dat	te Analyzed	: 06/0	1/01	
GC Column: DB-624	ID: 0.25 (mm)	Dil	lution Fact	or: 1.	0	
Soil Extract Volume:_	(uL)	Soi	il Aliquot	Volume	:	(uL)
CAS NO.	COMPOUND		ATION UNITS ug/Kg) UG/		Q	
$\begin{array}{c} 74-87-3\\ 75-01-4\\ 74-83-9\\ 75-00-3\\ 75-09-4\\ 75-35-4\\ 75-35-4\\ 75-35-4\\ 75-15-0\\ 75-09-2\\ 75-09-2\\ 75-09-2\\ 75-09-2\\ 75-34-3\\ 75-34-3\\ 75-34-3\\ 75-34-3\\ 78-93-3\\ 78-93-3\\ 78-93-3\\ 78-93-3\\ 78-93-3\\ 74-97-5\\ 563-58-6\\ 71-55-6\\ 563-58-6\\ 71-43-2\\ 79-01-6\\ 78-87-5\\ 74-95-3$	Iodomethane Carbon Disulfi Methylene Chlo trans-1,2-Dich Methyl tert-bu 1,1-Dichloroet Vinyl acetate 2-Butanone 2,2-Dichloropu Bromochloromet Chloroform 1,1,1-Trichlor 1,2-Dichloropu Benzene Trichloroether 1,2-Dichloropu Benzene Trichloroether 1,2-Dichloropu Dibromomethane Bromodichloror cis-1,3-Dichloropu	romethane thene ide oride nloroethene ityl ether thane ropane thané roethane ropene nloride thane ropane nloride thane ne ropane noropropene nethane		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		

FORM I VOA

VOLATILE	ORGANICS	ANALYSIS	DATA	SHEET

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Lab Name: MITK	M CORPORATION	Contract:	:	F-TP-2	
Lab Code: MITKE	M Case No.:	SAS No.:	SDG No.:	81125	
Matrix: (soil/w	ater) WATER	Lab S	Sample ID: 8112	25001	
Sample wt/vol:	5.000 (g/mL)	ML Lab H	File ID: V2E1	.125	
Level: (low/m	ned) LOW	Date	Received: 05/2	6/01	
<pre>% Moisture: not</pre>	dec	Date	Analyzed: 06/0	01/01	
GC Column: DB-6	524 ID: 0.25 (mm) Dilut	ion Factor: 1.	0	
Soil Extract Vo	olume:(uL)	Soil	Aliquot Volume	:(uL)
CAS NO.	COMPOUND	CONCENTRATI (ug/L or ug		Q	
$\begin{array}{c} 127-18-4\\ 591-78-6\\ 124-48-1\\ 106-93-4\\ 108-90-7\\ 630-20-6\\ 100-41-4\\ 1330-20-\\ 100-42-5\\ 75-25-2-\\ 98-82-8\\ 79-34-5-\\ 108-86-1\\ 96-18-4\\ 103-65-1\\ 96-18-4\\ 103-65-3\\ 95-49-8\\ 108-67-8\\ 106-43-4\\ 98-06-6\\ 95-63-6\\ 135-98-8\\ 99-87-6\\ 541-73-3\\ 106-46-7\\ 104-51-8\\ 95-50-1\\ 96-12-8\\ 120-82-3\\ 87-68-3\\ 91-20-3\\ \end{array}$	<pre> /1,3-Dichlory /Tetrachloro /Dibromochlo /Dibromochlo /Chlorobenze /Chlorobenze /Ethylbenzen /Styrene /Styrene /Styrene /Styrene /</pre>	ethene romethane ethane ne rachloroethane e al) nzene rachloroethane enzene thylbenzene uene thylbenzene nzene toluene obenzene obenzene obenzene obenzene obenzene utadiene			

EPA SAMPLE NO.

v	OLATILE	ORGANICS	ANALYSIS	DATA	SHEET

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Lab Name: MITKEM CORPORATION Contra	act:	?-TP-1
Lab Code: MITKEM Case No.: SAS N		I 31125
Matrix: (soil/water) WATER	Lab Sample ID: 81125	
Sample wt/vol: 5.000 (g/mL) ML	-	
Level: (low/med) LOW	Date Received: 05/26	5/01
<pre>% Moisture: not dec.</pre>	Date Analyzed: 06/01	/01
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0)
Soil Extract Volume:(uL)	Soil Aliquot Volume:	(uL)
	NCENTRATION UNITS: g/L or ug/Kg) UG/L	Q
75-71-8Dichlorodifluorometh $74-87-3$ Chloromethane $75-01-4$ Yinyl Chloride $74-83-9$ Bromomethane $75-00-3$ Chloroethane $75-69-4$ Trichlorofluorometha $75-69-4$ I.1-Dichloroethane $75-69-4$ I.1-Dichloroethane $75-69-4$ Acetone $74-88-4$ I.1-Dichloroethane $75-15-0$ Carbon Disulfide $75-09-2$ Methylene Chloride $156-60-5$ trans-1, 2-Dichloroethane $1634-04-4$ Methyl tert-butyl et $75-34-3$ 1, 1-Dichloroethane $108-05-4$ Vinyl acetate $78-93-3$ 2.9-Dichloroethane $108-05-4$ Ninyl acetate $78-93-3$ Somochloromethane $76-59-2$ Bromochloromethane $76-65-3$ Bromochloromethane $76-66-3$ Somochloromethane $71-55-6$ 1, 1, 1-Trichloroethane $56-23-5$ Carbon Tetrachloride $107-06-2$ 1, 2-Dichloropropane $74-97-5$ Benzene $79-01-6$ Trichloroethane $71-43-2$ Benzene $79-01-6$ Dibromomethane $75-7-4$ Bromodichloromethane $75-7-4$ Bromodichloromethane $70-10-15-$ Toluen $10061-01-5-$ Toluen $10061-02-6-$ Trans-1, 3-Dichloroprop $10061-02-6-$ Trans-1, 3-Dichloropethane $10061-02-6-$ Trans-1, 3-Dichloroethane $10061-02-6-$ Trans-1, 3-Dichloropethane	1 1 <td< td=""><td></td></td<>	

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1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

T.al	Name: MITKEM CORPORATION Cont	ract:	LF-TP-1	
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Lai	Code: MITKEM Case No.: SAS	No.: SDG	No.: 81125	
Mat	crix: (soil/water) WATER	Lab Sample ID:	81125002	
Sar	mple wt/vol: 5.000 (g/mL) ML	Lab File ID:	V2E1126	
Lev	vel: (low/med) LOW	Date Received:	05/26/01	
¥ 1	Noisture: not dec.	Date Analyzed:	06/01/01	
GC	Column: DB-624 ID: 0.25 (mm)	Dilution Facto	or: 1.0	
So	il Extract Volume:(uL)	Soil Aliquot V	olume:	_(uL)
•	α	ONCENTRATION UNITS:		
		ug/L or ug/Kg) UG/L		
		_		
'	142-28-91,3-Dichloropropane 127-18-4Tetrachloroethene		1 U 1 U	
·	591-78-62-Hexanone		1 U 1 U	
	124-48-1Dibromochloromethan			
	106-93-41,2-Dibromoethane			
	108-90-7Chlorobenzene		1 U	
	630-20-61,1,1,2-Tetrachlore	bethane	Î U	
	100-41-4Ethylbenzene		1 0	
	1330-20-7Xylene (Total)		1 U	
	100-42-5Styrene		1 U	
	75-25-2Bromoform		1 U	
	98-82-8Isopropylbenzene		1 U	
	79-34-51,1,2,2-Tetrachlord	bethane	1 U	
	108-86-1Bromobenzene		1 U	
	96-18-41,2,3-Trichloroprop		1 0	
	103-65-1n-Propylbenzene		1 U 1 U 1 U	
	95-49-82-Chlorotoluene		1 U 1 U	
	108-67-81,3,5-Trimethylben: 106-43-44-Chlorotoluene	2ette	1 U	
	98-06-6tert-Butylbenzene		1 U	
	95-63-61,2,4-Trimethylben	zene		
	135-98-8sec-Butylbenzene		1 U	
	99-87-64-Isopropyltoluene		1 U	
	541-73-11,3-Dichlorobenzene	2	1 U	
	106-46-71,4-Dichlorobenzene		1 U	
	104-51-8n-Butylbenzene		1 U	
	95-50-11,2-Dichlorobenzene	e	1 U	
	96-12-81,2-Dibromo-3-chlor		1 U	
	120-82-11,2,4-Trichloroben:		1 U	
	87-68-3Hexachlorobutadiene	3		
	91-20-3Naphthalene	2020	1 U 1 U	
	87-61-61,2,3-Trichloroben:		1 0	
			11	

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VOLATILE ORGANICS ANALYSIS DATA SHEET	
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Lab Name: MITKEM CORPORATION	Contract:
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81125
Matrix: (soil/water) WATER	Lab Sample ID: 81125003
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1127
Level: (low/med) LOW	Date Received: 05/26/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 06/01/01
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
1634-04-4Methyl tert-bu 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	1 U 1 U 1 U 1 U 1 U

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FORM I VOA

Lab Name: MITKEM CORPORATION	Contract: SP-1B	
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81125	
Matrix: (soil/water) WATER	Lab Sample ID: 81125004	
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1128	
Level: (low/med) LOW	Date Received: 05/26/01	
<pre>% Moisture: not dec</pre>	Date Analyzed: 06/01/01	
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	
1634-04-4Methyl tert-but 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene		



EPA SAMPLE NO.

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Lab Name: MITKEM CORPORATION	Contract: SP-2
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81125
Matrix: (soil/water) WATER	Lab Sample ID: 81125005
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1129
Level: (low/med) LOW	Date Received: 05/26/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 06/01/01
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

1634-04-4Methyl tert-butyl ether 71-43-2Benzene	14 1	
108-88-3Toluene 100-41-4Ethylbenzene		σ
1330-20-7Xylene (Total) 91-20-3Naphthalene	1 1	U U

VOLATILE ORGANICS ANALYSIS DATA SHEE	VOLATILE	ORGANICS	ANALYSIS	DATA	SHEE
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Lab Name: MITKEM CORPORATION	Contract: SP-3
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81125
Matrix: (soil/water) WATER	Lab Sample ID: 81125006
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1130
Level: (low/med) LOW	Date Received: 05/26/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 06/01/01
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
1634-04-4Methyl tert-bu 71-43-2Benzene 108-88-3Toluene 100-41-4Ethylbenzene 1330-20-7Xylene (Total) 91-20-3Naphthalene	

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EPA SAMPLE NO.

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VOLATILE ORGANICS ANALYSIS DATA SHEE	VOLATILE	ORGANICS	ANALYSIS	DATA	SHEE
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Lab Name: MITKEM	CORPORATION	Contract:	SP-4	
Lab Code: MITKEM	Case No.:	SAS No.: SDG	No.: 81125	
Matrix: (soil/wat	er) WATER	Lab Sample ID	: 81125007	
Sample wt/vol:	5.000 (g/mL) MI	Lab File ID:	V2E1131	
Level: (low/med) LOW	Date Received	: 05/26/01	
% Moisture: not d	ec	Date Analyzed	: 06/01/01	
GC Column: DB-624	ID: 0.25 (mm)	Dilution Facto	or: 1.0	
Soil Extract Volu	me:(uL)	Soil Aliquot	Volume:(u	ட)
CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/:		
71-43-2 108-88-3 100-41-4 1330-20-7-	Methyl tert-h Benzene Toluene Ethylbenzene Xylene (Total Naphthalene	.)	1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	

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EPA SAMPLE NO.

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VOLATILE	ORGANICS	ANALYSIS	DATA	SHEET

Lab Name: MITKEM CORPORATION Contract	TB-3
Lab Code: MITKEM Case No.: SAS No.	.: SDG No.: 81125
Matrix: (soil/water) WATER	Lab Sample ID: 81125008
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: V2E1124
Level: (low/med) LOW	Date Received: 05/26/01
<pre>% Moisture: not dec</pre>	Date Analyzed: 06/01/01
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume:(uL)	Soil Aliquot Volume:(uL)
	ENTRATION UNITS: L or ug/Kg) UG/L Q
75-71-8Dichlorodifluoromethane $74-87-3Chloromethane$ $75-01-4Vinyl Chloride$ $74-83-9Vinyl Chloride$ $74-83-9$	1 U 1 U 1 U 1 U 1 U 1 U 2 U 1 U 2 U 1 U 2 U 1 U 2 U 1

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EPA SAMPLE NO.

	VOLATILE	ORGANICS	ANALYSIS	DATA	SHEET
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Lab Name: MITKEM CORE	ORATION	Contract	41	TB-3	
			I	No . 01105	I
Lab Code: MITKEM (ase no.:	SAS NO.:	SDG	No.: 81125	
Matrix: (soil/water)	WATER	Lab	Sample ID:	81125008	
Sample wt/vol:	5.000 (g/mL) ML	Lab	File ID:	V2E1124	
Level: (low/med)	LOW	Dat	e Received:	05/26/01	
% Moisture: not dec.		Dat	e Analyzed:	06/01/01	
GC Column: DB-624	ID: 0.25 (mm)	Dil	ution Facto	or: 1.0	
Soil Extract Volume:_	(uL)	Soi	l Aliquot V	/olume:	(uL
			TION UNITS:		
CAS NO.	COMPOUND	(ug/L or	ug/Kg) UG/I	, Q	
$\begin{array}{c} 127-18-4\\ 591-78-6\\ 124-48-1\\ 106-93-4\\ 108-90-7\\ 630-20-6\\ 100-41-4\\ 1330-20-7\\ 100-42-5\\ 75-25-2\\ 98-82-8\\ 75-25-2\\ 98-82-8\\ 98-82-8\\ 98-82-8\\ 98-82-8\\ 98-82-8\\ 98-82-8\\ 98-82-8\\ 98-82-8\\ 98-82-8\\ 98-82-8\\ 95-49-8\\ 95-49-8\\ 95-49-8\\ 95-63-6\\ 95-63-6\\ 95-63-6\\ 95-63-6\\ 95-63-6\\ 95-63-6\\ 95-63-6\\ 95-50-1\\ 95-50-1\\ 95-50-1\\ 95-50-1\\ 95-50-1\\ 95-50-1\\ 95-50-1\\ 95-50-1\\ 95-28\\ 91-20-3\\ 91-20-3\\ \end{array}$	Bromoform Isopropylbenze 1,1,2,2-Tetrac Bromobenzene 1,2,3-Trichlor n-Propylbenzer 2-Chlorotoluer 1,3,5-Trimethy 4-Chlorotoluer tert-Butylbenze 1,2,4-Trimethy sec-Butylbenzene 1,3-Dichlorobe 1,4-Dichlorobe 1,2-Dichlorobe 1,2,4-Trichlor 1,2,4-Trichlor 1,2,4-Trichlor	ene chloroethane chloroethane chloroethane copropane de de de de de de de de de de de de de			

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1A VOLATILE ORGANICS ANALYSIS DATA SHEET

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EPA SAMPLE NO.

Lab Name: MITKEM (ORPORATION	Contract:	.:	VBLK2C	
Lab Code: MITKEM	Case No.:	SAS No.:	SDG 1	No.: 81125	
Matrix: (soil/wate	r) WATER	Lab S	ample ID:	V2B0601A	
Sample wt/vol:	5.000 (g/mL)	ML Lab F	ile ID:	V2E1122	
Level: (low/med)	LOW	Date 1	Received:		
% Moisture: not de	c	Date 2	Analyzed:	06/01/01	
GC Column: DB-624	ID: 0.25 (mm) Dilut:	ion Factor	c: 1.0	
Soil Extract Volum	e:(uL)	Soil 2	Aliquot Vo	olume:	(uL)
CAS NO.	COMPOUND	CONCENTRATIC (ug/L or ug,		Q	
$\begin{array}{c} 74-87-3\\ 75-01-4\\ 74-83-9\\ 75-00-3\\ 75-69-4\\ 75-35-4\\ 75-35-4\\ 67-64-1\\ 74-88-4\\ 75-15-0\\ 75-09-2\\ 156-60-5\\ 1634-04-4\\ 75-34-3\\ 108-05-4\\ 78-93-3\\ 108-05-4\\ 78-93-3\\ 590-20-7\\ 74-97-5\\ 590-20-7\\ 74-97-5\\ 563-58-6\\ 56-23-5\\ 107-06-2\\ 71-43-2\\ 79-01-6\\ 78-87-5\\ 74-95-3\\ 74-95-3\\ 74-95-3\\ 74-95-3\\ 75-27-4\\ 10061-01-5-\\ 108-88-3\\ 10061-02-6-\\ \end{array}$	Dichlorodif Vinyl Chlor Vinyl Chlor Bromomethan Chloroethan Chloroethane 	ne		1 UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU	

FORM I VOA

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

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Lab Name: MITKEM CORPORATIO	N Contra	act.	VB	LK2C	
					_1
Lab Code: MITKEM Case No	D.: SAS I	NO.:	SDG NO.: 8	1125	
Matrix: (soil/water) WATER		Lab Sample	ID: V2B06	01A	
Sample wt/vol: 5.000	(g/mL) ML	Lab File I	D: V2E11	22	
Level: (low/med) LOW		Date Recei	ved:		
<pre>% Moisture: not dec</pre>		Date Analy:	zed: 06/01	/01	
GC Column: DB-624 ID: 0.	.25 (mm)	Dilution Fa	actor: 1.0		
Soil Extract Volume:	(uL)	Soil Alique	ot Volume:		(uL)
		CENTRATION UN			
CAS NO. COMP	POUND (ug	g/L or ug/Kg)	JG/L	Q	
142-28-91, 3-127-18-4Tetr 591-78-6	rachloroethene exanone romochloromethane Dibromoethane Dibromoethane Dibromoethane Dibromoethane Dibromoethane Dibromoethane Dichloropenzene Correctione Dichlorobenzene	ethane ethane ethane ethane ene ene			

FORM I VOA

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WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CC	RPORATION	Contract:	ц <i>1</i>	
Lab Code: MITKEM	Case No.:	SAS No.:		SDG No.: 81125

			<u></u>			
	ĒPA	SMC1	SMC2	SMC3	OTHER	TOT
	SAMPLE NO.	#	(DCE) #	(TOL)#	(BFB) #	OUT
		=====	======	=====	======	===
01	VBLK2C	116	108	112	118	0
02	VBLK2CLCS	104	93	98	113	0
03	TB-3	101	96	95	102	0
04	LF-TP-2	102	93	98	101	0
05	LF-TP-1	102	97	98	100	0
06	SP-1	104	97	94	100	0
07	SP-1B	101	94	96	99	0
08	SP-2	103	97	98	100	0
09	SP-3	103	92	97	100	0
10	SP-4	104	94	98	101	0
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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

page 1 of 1

FORM II VOA-1

FORM 3 WATER VOLATILE LAB CONTROL SAMPLE

Lab Name:	MITKEM CO	RPORATION	Contract:	4		
Lab Code:	MITKEM	Case No.:	SAS No.:		SDG No.:	81125
	dlag dam					

Matrix Spike - Sample No.: VBLK2C

		SPIKE ADDED	SAMPLE CONCENTRATION	LCS	LCS	QC.
-	CONDOLINED			CONCENTRATION	%	LIMITS
	COMPOUND	(ug/L)	(ug/L)	(ug/L)	REC #	REC.
	Dichlorodifluoromethane	50	0.0	54	======	
	Chloromethane	50	0.0		108	17-180
		50	0.0	50	100	54-135
	Vinyl Chloride Bromomethane	50		49	98	63-131
.			0.0	52	104	58-132
Ċ	Chloroethane	50	0.0	48	96	69-127
- 1	Trichlorofluoromethane	50	0.0	54	108	58-140
	1,1-Dichloroethene	50	0.0	41	82	75-122
	Acetone	50	0.0	50	100	33-150
,	Iodomethane	50	0.0	43	86	67-132
' I	Carbon Disulfide	50	0.0	42	84	57-137
	Methylene Chloride	50	0.0	46	92	65-128
	trans-1,2-Dichloroethen	50	0.0	41	82	73-125
1	Methyl tert-butyl ether	50	0.0	46	92	62-136
	1,1-Dichloroethane	50	0.0	42	84	75-123
1	Vinyl acetate	50	0.0	41	82	62-129
	2-Butanone	50	0.0	41	82	54-136
	cis-1,2-Dichloroethene	50	0.0	44	88	77-122
- 1	2,2-Dichloropropane	50	0.0	47	94	63-132
-	Bromochloromethane	50	0.0	48	96	78-123
	Chloroform	50	0.0	50	100	75-122
- 1	1,1,1-Trichloroethane	50	0.0	48	96	74-126
	1,1-Dichloropropene	50	0.0	42	84	77-124
	Carbon Tetrachloride	50	0.0	49	98	74-127
1	1,2-Dichloroethane	50	0.0	54	108	76-123
	Benzene	50	0.0	43	86	78-121
	Trichloroethene	50	0.0	44	88	77-123
	1,2-Dichloropropane	50	0.0	44	88	77-122
	Dibromomethane	50	0.0	50	100	75-123

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

* Values outside of QC limits

COMMENTS:

FORM 3 WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION	Contract:	
Lab Code: MITKEM Case No.:	SAS No.:	SDG No.: 81125
Matrix Spike - Sample No.: VBLK2C		

	SPIKE	SAMPLE	LCS	LCS	QC.
	ADDED	CONCENTRATION	CONCENTRATION		LIMITS
COMPOUND	(ug/L)	(ug/L)	(ug/L)	REC #	REC.
	=========			======	======
Bromodichloromethane	50	0.0	50	100	78-121
cis-1,3-Dichloropropene	50	0.0	46	92	77-121
4-Methyl-2-pentanone	50	0.0	42	84	63-133
Toluene	50	0.0	44	88	77-122
trans-1,3-Dichloroprope		0.0	49	98	76-123
1,1,2-Trichloroethane	50	0.0	48	96	76-124
1,3-Dichloropropane	50	0.0	48	96	76-122
Tetrachloroethene	50	0.0	44	88	77-121
2-Hexanone	50	0.0	42	84	53-142
Dibromochloromethane	50	0.0	49	98	77-121
1,2-Dibromoethane	50	0.0	47	94	75-122
Chlorobenzene	50	0.0	45	90	77-120
1,1,1,2-Tetrachloroetha	50	0.0	49	98	78-119
Ethylbenzene	50	0.0	45	90	76-120
Xylene (Total)	150	0.0	140	93	76-121
Styrene	50	0.0	48	96	77-121
Bromoform	50	0.0	50	100	73-126
Isopropylbenzene	50	0.0	48	96	73-123
1,1,2,2-Tetrachloroetha	50	0.0	45	90	66-128
Bromobenzene	50	0.0	43	86	75-120
1,2,3-Trichloropropane	50	0.0	46	92	68-124
n-Propylbenzene	50	0.0	43	86	71-123
2-Chlorotoluene	50	. 0.0	42	84	73-121
1,3,5-Trimethylbenzene	50	0.0	44	88	72-123
4-Chlorotoluene	50	/ 0.0	44	88	74-120
tert-Butylbenzene	50	0.0	41	82	71-123
1,2,4-Trimethylbenzene	50	0.0	45	90	72-122
sec-Butylbenzene	50	0.0	44	88	70-125

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

* Values outside of QC limits

COMMENTS:

page 2 of 3

4A VOLATILE METHOD BLANK SUMMARY

Lab Name: MITKEM CORPORATIONContract:VBLK2CLab Code: MITKEMCase No.:SAS No.:SDG No.: 81125Lab File ID: V2E1122Lab Sample ID: V2B0601ADate Analyzed: 06/01/01Time Analyzed: 1120GC Column: DB-624ID: 0.25 (mm)Heated Purge: (Y/N) NInstrument ID: V2V2

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

	EPA	LAB		LAB	TIME
	SAMPLE NO.	SAMPLE	ID	FILE ID	ANALYZED
		==========	=====		
01	VBLK2CLCS	V2L0601A		V2E1123	1230
02	TB-3	81125008		V2E1124	1313
02	LF-TP-2	81125001		V2E1125	1342
03	LF-TP-1	81125002		V2E1125 V2E1126	1410
					_
05	SP-1	81125003		V2E1127	1439
06	SP-1B	81125004		V2E1128	1507
07	SP-2	81125005		V2E1129	1536
08	SP-3	81125006		V2E1130	1604
09	SP-4	81125007		V2E1131	1633
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COMMENTS:

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page 1 of 1

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MITKEM Corporation

³ Semivolatile Organics ³

1B SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: MITKEM CORPO	RATION Cont	ract:	SP-1
Lab Code: MITKEM Ca	se No.: SAS	No.: SDG	No.: 81125
Matrix: (soil/water) W	ATER	Lab Sample ID:	81125003
Sample wt/vol: 50	00.0 (g/mL) ML	Lab File ID:	S1C2102
Level: (low/med) La	OW	Date Received:	05/26/01
<pre>% Moisture: de</pre>	ecanted: (Y/N)	Date Extracted	1:06/01/01
Concentrated Extract Vo	olume: 500(uL)	Date Analyzed:	06/20/01
Injection Volume:	1.0 (uL)	Dilution Facto	or: 1.0
GPC Cleanup: (Y/N) N	рн:		
CAS NO.		NCENTRATION UNITS: g/L or ug/Kg) UG/L	Q

91-20-3Naphthalene	10	U
91-57-62-Methylnaphthalene	10	U

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1B SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: MITKEM COR	PORATION Contract	: 23	SP-1B
Lab Code: MITKEM	Case No.: SAS No.	: SDG	No.: 81125
Matrix: (soil/water)	WATER	Lab Sample ID:	81125004
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID:	S1C2103
Level: (low/med)	LOW	Date Received:	05/26/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted	:06/01/01
Concentrated Extract	Volume: 500(uL)	Date Analyzed:	06/20/01
Injection Volume:	1.0(uL)	Dilution Factor	r: 1.0
GPC Cleanup: (Y/N)	N pH:		
	CONCE	TRATION UNITS:	

CAS NO.	COMPOUND	(ug/L or ug		Q
91-20-3 91-57-6	Naphthalene	halene	10 10	

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1B SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

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	or-	~

Lab Name: MITKEM CORPOR	ATION Contract	t: 43
Lab Code: MITKEM Cas	se No.: SAS No.	.: SDG No.: 81125
Matrix: (soil/water) WA	TER	Lab Sample ID: 81125005
Sample wt/vol: 50	0.0 (g/mL) ML	Lab File ID: S1C2104
Level: (low/med) LO	W	Date Received: 05/26/01
<pre>% Moisture: de</pre>	canted: (Y/N)	Date Extracted:06/01/01
Concentrated Extract Vol	lume: 500(uL)	Date Analyzed: 06/20/01
Injection Volume: 1	.0(uL)	Dilution Factor: 1.0
GPC Cleanup: (Y/N) N	рн:	
CAS NO.		NTRATION UNITS: or ug/Kg) UG/L Q

91-20-3Naphthalene 91-57-62-Methylnaphthalene	 0.0	-
	 _	



1B SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: MITKEM CORPORATION Contra	act: 2 SP-3
Lab Code: MITKEM Case No.: SAS N	No.: SDG No.: 81125
Matrix: (soil/water) WATER	Lab Sample ID: 81125006
Sample wt/vol: 500.0 (g/mL) ML	Lab File ID: S1C2100
Level: (low/med) LOW	Date Received: 05/26/01
<pre>% Moisture: decanted: (Y/N)</pre>	Date Extracted:06/01/01
Concentrated Extract Volume: 500(uL)	Date Analyzed: 06/20/01
Injection Volume: 1.0(uL)	Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH:	
	CENTRATION UNITS: /Lorug/Kg) UG/L Q

91-20-3Naphthalene	10		
91-57-62-Methylnaphthalene	10	ט	

1B SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: MITKEM COR	PORATION Contrac	it: a	SP-4
Lab Code: MITKEM	Case No.: SAS No	SDG	No.: 81125
Matrix: (soil/water)	WATER	Lab Sample ID:	81125007
Sample wt/vol:	500.0 (g/mL) ML	Lab File ID:	S1C2101
Level: (low/med)	LOW	Date Received:	05/26/01
<pre>% Moisture:</pre>	decanted: (Y/N)	Date Extracted	:06/01/01
Concentrated Extract	Volume: 500(uL)	Date Analyzed:	06/20/01
Injection Volume:	1.0 (uL)	Dilution Factor	r: 1.0
GPC Cleanup: (Y/N)	N pH:		
CAS NO		ENTRATION UNITS:	0

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1B SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: MITKEM CORPORATION Contract	L: SBLK1D
Lab Code: MITKEM Case No.: SAS No.	.: SDG No.: 81125
Matrix: (soil/water) WATER	Lab Sample ID: S0601-BW1
Sample wt/vol: 1000 (g/mL) ML	Lab File ID: S1C2171
Level: (low/med) LOW	Date Received:
<pre>% Moisture: decanted: (Y/N)</pre>	Date Extracted:06/01/01
Concentrated Extract Volume: 1000(uL)	Date Analyzed: 06/22/01
Injection Volume: 1.0(uL)	Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH:	
•	NTRATION UNITS: or ug/Kg) UG/L Q

91-57-62-Methylnaphthalene10 U	91-20-3Naphthalene	10	บ
	91-57-62-Methylnaphthalene	10	บ

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: MITKEM CORPORATION	Contract:
Lab Code: MITKEM Case No.:	SAS No.: SDG No.: 81125
Matrix: (soil/water) WATER	Lab Sample ID: S0601-LW1
Sample wt/vol: 1000 (g/mL) ML	Lab File ID: S1C2174
Level: (low/med) LOW	Date Received:
<pre>% Moisture: decanted: (Y/N)</pre>	Date Extracted:06/01/01
Concentrated Extract Volume: 1000(u	L) Date Analyzed: 06/22/01
Injection Volume: 1.0(uL)	Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH:	
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q

91-20-3Naphthalene 91-57-62-Methylnaphthalene	38 38	
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2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab	Name:	MITKEM	CORPORATION	Contract:	<i>,</i> .	
Lab	Code:	MITKEM	Case No.:	SAS No.:		SDG No.: 81125

				02	04	05		07		
	BPA	S1	S2 "	S3 "	S4	S5 "	S6 "	S7 "	S8 "	TOT
	SAMPLE NO.	(NBZ)#	#	#	#	#	#	#	#	OUT
		======	=====	=====	=====		======	======	======	===
01	SP-3	46								0
	SP-4	62]	0
03	SP-1	56						·		0
04	SP-1B	49]	0
05	SP-2	51								0
06	SBLK1D	56								0
07	SIDLCS	78								0
08 09 10										l
09										
10]
11										
12										
13										
14		<u>.</u>								
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21										
22										
23]	
24										
25										
26				1	12					
11 12 13 14 15 16 17 18 20 21 22 24 25 26 27										
28 29										
29										
30					·					
			I				I			I

QC LIMITS (38-119)

S1 (NBZ) = Nitrobenzene-d5

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

page 1 of 1

FORM II SV-1

FORM 3 WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION	Contract:	
Lab Code: MITKEM Case No.:	SAS No.:	SDG No.: 81125
Matrix Spike - Sample No.: S1DLCS		

COMPOUND	SPIKE	SAMPLE	LCS	LCS	QC.
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
	(ug/L)	(ug/L)	(ug/L)	REC #	REC.
Naphthalene 2-Methylnaphthalene	======== 50 50		38 38	====== 76 76	====== 50-105 50-107



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 2 outside limits

COMMENTS:

FORM III SV

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: MITKEM CORPORATIONContract:SBLK1DLab Code: MITKEMCase No.:SAS No.:SDG No.: 81125Lab File ID: S1C2171Lab Sample ID: S0601-BW1Instrument ID: S1Date Extracted: 06/01/01Matrix: (soil/water) WATERDate Analyzed: 06/22/01Level: (low/med) LOWTime Analyzed: 2015

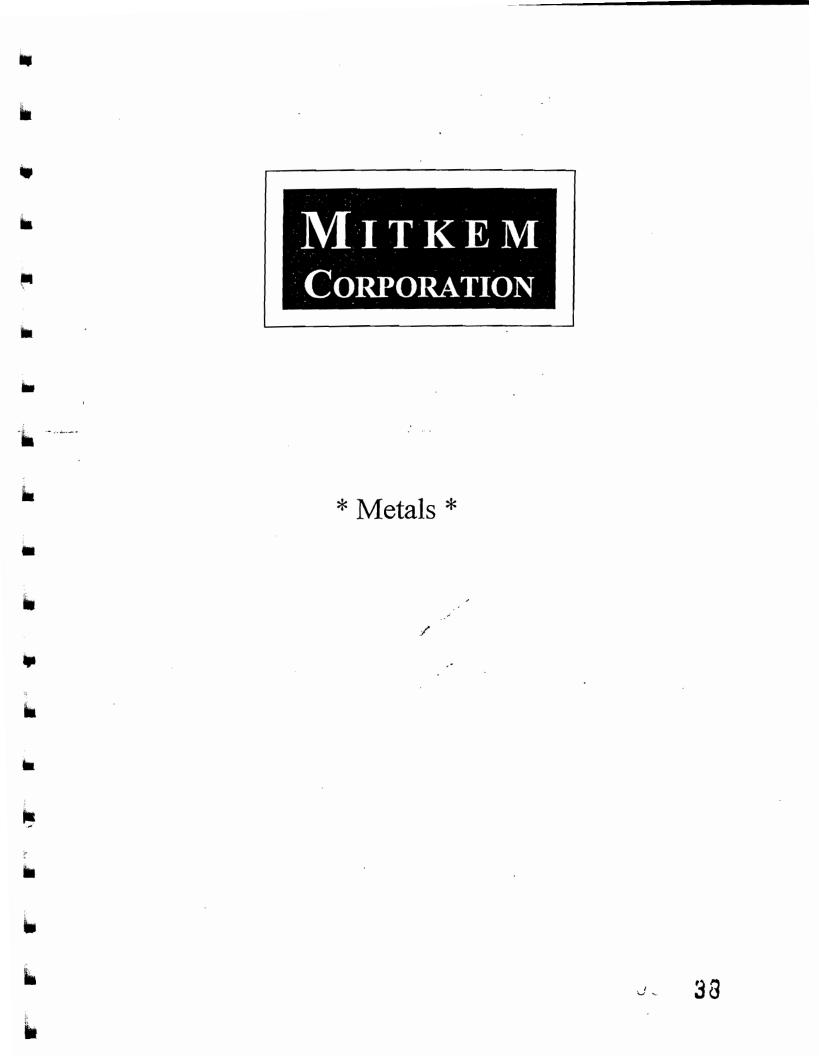
THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA	LAB	LAB	DATE
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
			================================	==================
01		81125006	S1C2100	06/20/01
	SP-4	81125007	S1C2101	06/20/01
03	SP-1	81125003	S1C2102 .	06/20/01
04	SP-1B	81125004	S1C2103	06/20/01
05	SP-2	81125005	S1C2104	06/20/01
06	SIDLCS	S0601-LW1	S1C2174	06/20/01 06/20/01 06/20/01 06/22/01
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201				

COMMENTS:

page 1 of 1

FORM IV SV



INORGANIC ANALYSIS DATA SHEET

1: SP-1 Lab Name: MITKEM_CORPORATION Contract: Lab Code: MITKEM Case No.: SAS No.: SDG No.: 81125 Matrix (soil/water): Lab Sample ID: D81125003 WATER Level (low/med): Date Received: MED 05/26/01

% Solids:

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

CAS No. Analyte Concentration С Q Μ 7429-90-5 Aluminum NR NR 7440-36-0 Antimony 7440-38-2 Arsenic NR Barium NR 7440-39-3 NR Beryllium 7440-41-7 Cadmium 7440-43-9 NR Calcium NR 7440-70-2 NR 7440-47-3 Chromium 7440-48-4 Cobalt NR NR 7440-50-8 Copper 52.1 В Ρ 7439-89-6 Iron 7439-92-1 Lead NR NR 7439-95-4 Magnesium NR 7439-96-5 Manganese 7439-97-6 Mercury NR NR 7440-02-0 Nickel 1 7440-09-7 Potassium NR 7782-49-2 Selenium NR 1 NR 7440-22-4 Silver NR 7440-23-5 Sodium 7440-28-0 Thallium NR NR 7440-62-2 Vanadium NR 7440-66-6 Zinc Cyanide NR

Color Before:	Clarity Before	re:	Texture:	
Color After:	Clarity After:		Artifacts:	
Comments: DISSOLVEE	D_METALS_FOR_SP-1			

UG/L

NYSDEC SAMPLE NO.

10/95

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				NYSDEC - ASP 1	QUEET	NYSDEC	SAMPLE NO.	
	Lab Name:	INORGANIC ANALYSIS DATA SHEET					SP-1B	
Ì	Lab Code:	MITKEM	Case No.:	SAS No	.:	SDG No.:	81125	
	Matrix (soil/wate	er):	WATER_		Lab Sample ID:	D811250	004	
	Level (low/med)):	MED		Date Received:	05/26/01		
۱. w	% Solids:							

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

С CAS No. Analyte Concentration Q Μ 7429-90-5 Aluminum NR 7440-36-0 NR Antimony 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 NR 7440-47-3 Chromium 7440-48-4 Cobalt NR 7440-50-8 Copper NR 32.8 В P 7439-89-6 Iron 7439-92-1 Lead NR 7439-95-4 NR Magnesium 7439-96-5 Manganese NR NR 7439-97-6 Mercury 7440-02-0 Nickel 1 NR NR 7440-09-7 Potassium 7782-49-2 Selenium NR .1 NR 7440-22-4 Silver 7440-23-5 Sodium .-NR 7440-28-0 Thallium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR Cyanide NR

1	Color Before:		Clarity Before:	 Texture:	_
	Color After:		Clarity After:	 Artifacts:	-
1	Comments: DISSOLVED	_METALS_FOR_S	P-1B		
)				 	

10/95

UG/L

INORGANIC ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

	Lab Name:	MITKEM_CORPO	ORATION	 Contract:		SP-2	2
<u>in</u>	Lab Code:	MITKEM	Case No.:	 SAS No.:		SDG No.:	81125
	Matrix (soil/wate	er):	WATER_		Lab Sample ID:	D811250	005
	Level (low/med):		MED	Date Received:		05/26/01	

% Solids:

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

UG/L

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	CAS No.	Analyte	Concentration	С	Q	М
-	7429-90-5	Aluminum				NR
, L	7440-36-0	Antimony				
ŀ	7440-38-2	Arsenic				NR
· .	7440-39-2	Barium	· · · · · · · · · · · · · · · · · · ·	·		NR
	7440-39-3	Beryllium			_	NR
· _	7440-43-9	Cadmium				NR
ŀ						NR
F		Chromium				NR
L		Cobalt				
ŀ	7440-50-8	Copper				
F	_7439-89-6	Iron	25.0	U		P
1	7439-89-0	Lead	2.0			NR
	7439-92-1	Magnesium				NR
ŀ		Manganese				NR
Ļ	_7439-90-5 7439-97-6	Mercury				NR
1	_7439-97-0	Nickel				
Ļ	_7440-02-0 7440-09-7	Potassium	/			
Ļ	_7440-09-7 7782-49-2	Selenium				
ŀ	_//82-49-2 7440-22-4	Silver				
ŀ	_7440-22-4 7440-23-5	Sodium				
ŀ		Thallium				
	_7440-28-0 7440-62-2	Vanadium				
ŀ		Zinc				
-	_7440-66-6					
ŀ		Cyanide				
Į				,		
Before:			Clarity Before:			
After:		Clar	rity After:			

DISSOLVED_METALS_FOR_SP-2___

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NYSDEC SAMPLE NO. _____

Lab Name:	MITKEM_CORPO	DRATION	Contract:			SP-	3	
Lab Code:	MITKEM	Case No.:	 SAS No.).:		SDG No.:	81125	
Matrix (soil/wate	er):	WATER_		Lat	Sample ID:	D811250	06	
Level (low/med)	:	MED		Dat	e Received:	05/26/01		

% Solids:

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

UG/L

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	CAS No.	Analyte	Concentration	С	Q	М	
	7429-90-5	Aluminum				NR	
1	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		1		NR	
	7440-23-5	Sodium				NR	
	7440-28-0	Thallium				NR	
	7440-62-2	Vanadium				NR	
	7440-66-6	Zinc				NR	
		Cyanide				NR	
						T	
Color Before:			Clarity Before:	<u>-</u>			Texture
Color After:		Clau	rity After:				Artifact

Color B

Comments:

DISSOLVED_METALS_FOR_SP-3_____

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- inte	t		NYS	DEC - ASP			
			INORGANIC ANA	I LYSIS DATA	SHEET	NYSDEC	SAMPLE NO.
	Lab Name:	MITKEM_CORPO	ORATION	Contract:		SP-	4
	Lab Code:	MITKEM	Case No.:	SAS No	D.:	SDG No.:	81125
	Matrix (soil/wat	er):	WATER_		Lab Sample ID:	D811250	007
Level (low/med):):	MED		Date Received:	05/26/01	
	% Solids:						

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

UG/L

7429-90-5 Alt 7440-36-0 An 7440-38-2 Ar 7440-39-3 Ba 7440-41-7 Be 7440-43-9 Ca 7440-70-2 Ca 7440-47-3 Ch 7440-48-4 Co	Analyte uminum timony senic rium ryllium dmium lcium romium balt			c	Q	M NR NR NR NR NR
7440-36-0 An 7440-38-2 An 7440-39-3 Ba 7440-41-7 Be 7440-43-9 Ca 7440-70-2 Ca 7440-47-3 Ch 7440-48-4 Co	timony senic rum ryllium dmium lcium romium balt					NR NR NR NR
7440-38-2 Arr 7440-39-3 Ba 7440-41-7 Be 7440-43-9 Ca 7440-70-2 Ca 7440-47-3 Ch 7440-48-4 Co	senic rium ryllium dmium lcium romium balt					NR NR NR NR
7440-38-2 Arr. 7440-39-3 Ba 7440-41-7 Be: 7440-43-9 Ca 7440-70-2 Ca 7440-47-3 Ch 7440-48-4 Co	senic rium ryllium dmium lcium romium balt					NR NR NR
7440-39-3 Ba 7440-41-7 Be 7440-43-9 Ca 7440-70-2 Ca 7440-47-3 Ch 7440-48-4 Co	ryllium dmium lcium romium balt					NR NR
7440-43-9 Ca 7440-70-2 Ca 7440-47-3 Ch 7440-48-4 Co	dmium lcium romium balt			_		
7440-43-9 Ca 7440-70-2 Ca 7440-47-3 Ch 7440-48-4 Co	dmium lcium romium balt			_		
Ca 7440-47-3Ca 7440-48-4Co	lcium romium balt					1111
Co	balt					NR
						NR
						NR
7440-50-8 Co	pper					NR
7439-89-6 Iro		602				P
7439-92-1 Lea	ad					NR
7439-95-4 Ma	Ignesium					NR
7439-96-5 Ma	inganese			-		NR
7439-97-6 Me	ercury					NR
7440-02-0 Nic	ckel		1			NR
7440-09-7 Poi	assium					NR
7782-49-2 Sel	enium			-		NR
7440-22-4 Sil	ver		1		•	NR
7440-23-5 Soc	dium		•			NR
7440-28-0 Th	allium					NR
7440-62-2 Va	nadium					NR
_7440-66-6 Zir						NR
Су	anide		_			NR
or Before:	(Clarity Before:				
or After:	Clari	ty After:				

DISSOLVED_METALS_FOR_SP-4

		INORGANIC ANALYSIS DATA SHEET		NYSDEC SAMPLE NO		
Lab Name:	MITKEM_CO	RPORATION	Contract:	SP-1		
Lab Code:	MITKEM	Case No.:	SAS No.:	SDG No.: 81125		
Matrix (soil/w	vater):	WATER_	Lab Sample ID:	T81125003		
Level (low/me	ed):	MED	Date Received:	05/26/01		
% Solids:						

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

С Q CAS No. Analyte Concentration М 7429-90-5 NR 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 Calcium 7440-70-2 NR 7440-47-3 Chromium NR 7440-48-4 Cobalt 7440-50-8 Copper NR 3940 P 7439-89-6 Iron NR Lead 7439-92-1 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 7440-62-2 Vanadium NR 7440-66-6 Zinc NR NR Cyanide

ک	Color Bei	fore:	 Clarity Before:	 Texture:	
t te	Color Aft	er:	 Clarity After:	 Artifacts:	
۲	Comment	ts:			

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UG/L

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INORGANIC ANALYSIS DATA SHEET

	Lab Name:	MITKEM_CORPO	ORATION	Contract:		SP-	1B
	Lab Code:	MITKEM	Case No.:	SAS No	.:	SDG No.:	81125
	Matrix (soil/wat	er):	WATER_		Lab Sample ID:	T811250	004
Level (low/med):):	MED		Date Received:	05/26/01	

% Solids:

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

UG/L

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NYSDEC SAMPLE NO.

CAS No.	Analyte	Concentration	С	Q	М
7429-90-5	Aluminum				NF
7440-36-0	Antimony				NF
7440-38-2	Arsenic				NF
7440-39-3	Barium				NF
7440-41-7	Beryllium				NF
7440-43-9	Cadmium				
7440-70-2	Calcium				NF
7440-47-3	Chromium				NF
7440-48-4	Cobalt				NR
7440-50-8	Copper				NF
7439-89-6	Iron	1080			P
7439-92-1	Lead				NF
7439-95-4	Magnesium				NF
7439-96-5	Manganese				NF
7439-97-6	Mercury				NF
7440-02-0	Nickel	1	•		NF
7440-09-7	Potassium		10		NF
7782-49-2	Selenium				NF
7440-22-4	Silver		1		NF
7440-23-5	Sodium				NF
7440-28-0	Thallium				NF
7440-62-2	Vanadium				NF
7440-66-6	Zinc				NF
	Cyanide				NF

Color Before:		Clarity Before:	 Texture:	
Color After:		Clarity After:	 Artifacts:	
Comments:				
	·			

10/95

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NYSDEC SAMPLE NO.

		INORGANIC ANALYSIS DATA SHEET					NYSDEC SAMPLE NO.		
-	Lab Name:	MITKEM_CORP	ORATION	Contract:			SP-	2	
ي ال	Lab Code:	MITKEM	Case No.:	SAS No	o.:	5	SDG No.:	81125	
	Matrix (soil/wat	er):	WATER_		Lab Sample	ID:	T 8 11250	005	
	Level (low/med)):	MED		Date Receiv	red:	05/26/01		

% Solids:

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

UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum		_	_	NF
7440-36-0	Antimony				TNF
7440-38-2	Arsenic				NR
7440-39-3	Barium				
7440-41-7	Beryllium				N R
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				N R
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron	9750			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	1			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				
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				N R

Ì	Color Before:	 Clarity Before:	 Texture:	
	Color After:	 Clarity After:	 Artifacts:	
	Comments:			
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NYSDEC - ASP 1 INORGANIC ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

Lab Name:	MITKEM_CORPO	ORATION	Contract:		SP-	3
Lab Code:	MITKEM	Case No.:	SAS No	o.:	SDG No.:	81125
Matrix (soil/wat	er):	WATER_		Lab Sample ID:	T811250	06
Level (low/med)):	MED		Date Received:	05/26/01	

% Solids:

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

UG/L

		CAS No.	Analyte	Concentration	С	Q	м	
7440-38-2 Arsenic NR 7440-39-3 Barium NR 7440-41-7 Beryllium NR 7440-43-9 Cadmium NR 7440-43-9 Cadmium NR 7440-43-9 Cadmium NR 7440-43-9 Cadmium NR 7440-47-3 Chromium NR 7440-48-4 Cobalt NR 7440-48-4 Cobalt NR 7440-48-4 Cobalt NR 7440-48-4 Cobalt NR 7440-50-8 Copper NR 7439-92-1 Lead NR 7439-92-5 Magnesium NR 7439-92-6 Iron 2970 P 7439-95-5 Magnesium NR 7440-02-0 Nickel / NR 7440-02-7 Potassium NR 7440-02-8 Gelenium NR 7440-23-5 Sodium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium NR 7440-62-2 V	74	129-90-5	Aluminum				NR	
7440-39-3 Barium NR 7440-41-7 Beryllium NR 7440-43-9 Cadmium NR 7440-70-2 Calcium NR 7440-43-9 Cadmium NR 7440-47-2 Chromium NR 7440-47-3 Chromium NR 7440-48-4 Cobalt NR 7440-50-8 Copper NR 7439-89-6 Iron 2970 P 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Magnaese NR 7440-02-0 Nickel NR 7440-02-0 Nickel NR 7440-02-0 Nickel NR 7440-02-0 Nickel NR 7440-02-1 Selenium NR 7440-22-4 Silver NR 7440-23-5 Sodium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium	' 74	40-36-0	Antimony				NR]	
7440-41-7 Beryllium NR 7440-43-9 Cadmium NR 7440-70-2 Calcium NR 7440-47-3 Chromium NR 7440-47-3 Chromium NR 7440-47-3 Chromium NR 7440-48-4 Cobalt NR 7440-50-8 Copper NR 7439-89-6 Iron 2970 P 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Manganese NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-02-0 Nickel NR 7440-02-1 Potassium NR 7440-02-2 Selenium NR 7440-23-5 Sodium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR Color Before:	74	40-38-2	Arsenic				NR	
7440-43-9 Cadmium NR 7440-70-2 Calcium NR 7440-47-3 Chromium NR 7440-47-3 Chromium NR 7440-48-4 Cobalt NR 7440-48-4 Cobalt NR 7440-50-8 Copper NR 7439-89-6 Iron 2970 P 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Magnesium NR 7439-95-6 Mercury NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-09-7 Potassium NR 7440-22-4 Silver NR 7440-22-4 Silver NR 7440-23-5 Sodium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR Color Before:	74	140-39-3	Barium				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 2970 P 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Magnese NR 7439-96-5 Magnese NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-02-7 Potasium NR 7440-22-4 Silver NR 7440-23-5 Sodium NR 7440-22-2 Vanadium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR 7440-66-6 Zinc NR 7440-66-6 Zinc NR Color Before: Clarity Before: T		40-41-7	Beryllium				NR	
7440-47-3 Chromium NR 7440-48-4 Cobalt NR 7440-50-8 Copper NR 7439-89-6 Iron 2970 P 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Magnesium NR 7439-96-5 Magnesee NR 7440-02-0 Nickel NR 7440-02-0 Nickel NR 7440-22-4 Silver NR 7440-23-5 Sodium NR 7440-28-0 Thallium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR Color Before: Clarity Before: T	74	140-43-9	Cadmium				NR	
7440-48-4 Cobalt NR 7440-50-8 Copper NR 7439-89-6 Iron 2970 P 7439-92-1 Lead NR 7439-92-1 Lead NR 7439-92-1 Lead NR 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Manganese NR 7440-02-0 Nickel NR 7440-02-0 Nickel NR 7440-02-0 Nickel NR 7440-22-4 Silver 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 NR Color Before: Clarity Before: T	74	140-70-2	Calcium				NR	
7440-50-8 Copper NR 7439-89-6 Iron 2970 P 7439-92-1 Lead NR 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Manganese NR 7439-96-5 Marganese NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-09-7 Potassium NR 7440-09-7 Potassium NR 7440-22-4 Silver NR 7440-22-4 Silver NR 7440-23-5 Sodium NR 7440-23-5 Sodium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR 7440-66-6 Zinc NR Color Before: Clarity Before: T	74	40-47-3	Chromium				NR	
7439-89-6 Iron 2970 P 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Manganese NR 7439-96-5 Manganese NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-02-0 Nickel NR 7440-02-1 Potassium NR 7440-22-4 Silver NR 7440-22-4 Silver NR 7440-23-5 Sodium NR 7440-28-0 Thallium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR Color Before: Clarity Before: T	74	40-48-4	Cobalt				NR	
7439-89-6 Iron 2970 P 7439-92-1 Lead NR 7439-95-4 Magnesium NR 7439-95-5 Manganese NR 7439-96-5 Manganese NR 7439-97-6 Mercury NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-09-7 Potassium NR 7440-22-4 Silver NR 7440-22-4 Silver NR 7440-23-5 Sodium NR 7440-62-2 Vanadium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR Color Before: Clarity Before: T	74	40-50-8						
7439-95-4 Magnesium NR 7439-96-5 Manganese NR 7439-97-6 Mercury NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-09-7 Potassium NR 7782-49-2 Selenium NR 7440-23-5 Sodium NR 7440-23-5 Sodium NR 7440-23-5 Sodium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR 7440-66-6 Zinc NR Color Before: Clarity Before: T	74	139-89-6	Iron	2970			P	
7439-96-5 Manganese NR 7439-97-6 Mercury NR 7440-02-0 Nickel NR 7440-09-7 Potassium NR 7440-22-4 Selenium NR 7440-22-4 Silver NR 7440-23-5 Sodium NR 7440-23-5 Sodium NR 7440-23-0 Thallium NR 7440-28-0 Thallium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR 7440-66-6 Zinc NR Color Before: Clarity Before:	74	139-92-1	Lead				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 7440-23-5 Sodium NR 7440-28-0 Thallium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR 7440-66-6 Zinc NR Color Before: Clarity Before:	74	139-95-4	Magnesium				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 7440-66-6 Zinc NR Color Before: Clarity Before: T	74	139-96-5	Manganese				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 7440-23-5 Sodium NR 7440-23-0 Thallium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR 7440-66-6 Zinc NR Color Before: Clarity Before:	74	439-97-6	Mercury				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 NR Color Before: Clarity Before: T	74	40-02-0		1			[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 7440-66-6 Zinc NR Color Before: Clarity Before: T	74	440-09-7	Potassium				[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: T	77	782-49-2	Selenium				[NR]	
7440-28-0 Thallium NR 7440-62-2 Vanadium NR 7440-66-6 Zinc NR Cyanide NR Color Before: Clarity Before: To	74	140-22-4	Silver		-		NR	
7440-62-2 Vanadium NR 7440-66-6 Zinc NR Cyanide NR Color Before: Clarity Before: T	74	440-23-5	Sodium				[NR]	
7440-66-6 Zinc NR Cyanide NR Color Before: Clarity Before: T	74	440-28-0	Thallium				NR	
Color Before: Clarity Before: T	74	440-62-2	Vanadium				[NR]	
Color Before: Clarity Before: T	74	140-66-6	Zinc				NR	
			Cyanide				NR	
	Color Before:			Clarity Before:				Texture:
Color After: Clarity After: A				·				
	Color After:		Clar	ity After:				Artifacts
Comments:	Comments:							

INORGANIC ANALYSIS DATA SHEET

_ : SP-4 Lab Name: MITKEM_CORPORATION Contract: Lab Code: MITKEM Case No.: SAS No.: 81125___ SDG No.: T81125007____ Matrix (soil/water): WATER Lab Sample ID: 05/26/01____ Level (low/med): MED____ Date Received:

% Solids:

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

UG/L

NYSDEC SAMPLE NO.

29-90-5 40-36-0 40-38-2 40-39-3 40-41-7 40-43-9 40-70-2 40-47-3 40-48-4 40-50-8	Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt				NR NR NR NR NR	
40-36-0 40-38-2 40-39-3 40-41-7 40-43-9 40-70-2 40-47-3 40-47-3 40-48-4 40-50-8	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt				NR NR NR NR	
40-38-2 40-39-3 40-41-7 40-43-9 40-70-2 40-47-3 40-48-4 40-50-8	Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt				NR NR NR	
40-39-3 40-41-7 40-43-9 40-70-2 40-47-3 40-48-4 40-50-8	Barium Beryllium Cadmium Calcium Chromium Cobalt					
40-43-9 40-70-2 40-47-3 40-48-4 40-50-8	Beryllium Cadmium Calcium Chromium Cobalt		_			
40-70-2 40-47-3 40-48-4 40-50-8	Cadmium Calcium Chromium Cobalt				-t . - 1	
40-47-3 40-48-4 40-50-8	Calcium Chromium Cobalt				NR	
40-47-3 40-48-4 40-50-8	Chromium Cobalt				NR	
40-48-4	Cobalt				NR	
40-50-8					NR	
	Copper				NR	
39-89-6	Iron	3790			P	
39-92-1	Lead				NR	
39-95-4	Magnesium				NR	
39-96-5					NR	
39-97-6	· · ·				NR	
40-02-0	Nickel	1			NR	
40-09-7	Potassium				NR	
82-49-2	Selenium				NR	
40-22-4			·		NR	
40-23-5	Sodium				NR	
40-28-0	Thallium					
40-62-2					NR	
40-66-6	Zinc				NR	
	Cyanide				NR	
		Clarity Before:				Texture:
	Clar	rity After:				Artifacts
	39-96-5 39-97-6 40-02-0 40-09-7 82-49-2 40-22-4 40-23-5 40-28-0 40-62-2 40-66-6	39-96-5 Manganese 39-97-6 Mercury 40-02-0 Nickel 40-09-7 Potassium 82-49-2 Selenium 40-22-4 Silver 40-23-5 Sodium 40-66-2 Vanadium 40-66-6 Zinc Cyanide	39-96-5 Manganese 39-97-6 Mercury 40-02-0 Nickel 40-09-7 Potassium 82-49-2 Selenium 40-22-4 Silver 40-23-5 Sodium 40-62-2 Vanadium 40-66-6 Zinc Clarity Before: Clarity After:	39-96-5 Manganese 39-97-6 Mercury 40-02-0 Nickel 40-09-7 Potassium 82-49-2 Selenium 40-22-4 Silver 40-23-5 Sodium 40-62-2 Vanadium 40-66-6 Zinc Clarity Before:	39-96-5 Manganese 39-97-6 Mercury 40-02-0 Nickel 40-09-7 Potassium 82-49-2 Selenium 40-22-4 Silver 40-23-5 Sodium 40-62-2 Vanadium 40-66-6 Zinc Clarity Before:	39-96-5 Manganese NR 39-97-6 Mercury NR 40-02-0 Nickel Image: Constraint of the second

NYSDEC - ASP 3 BLANKS

Lab Name:	MITKEM_COR	PORATION	 Contract:		
Lab Code:	MITKEM	Case No.:	 SAS No.:	 SDG No.:	81125
Preparation Bla	ank Matrix (soil/wa	iter):	WATER		

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

UG/L

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									NO		
ı	Initial Calib. Blank		Continuing Calibration Blank (ug/L)				DODY Prepa- ration	'BW ₁			
Analyte	(ug/L)	С	1	С	2	С	3	C	Blank	С	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											_
Calcium											
Chromium											
Cobalt											
Copper											
Iron	25.0	U	25.0	U	25.0	~[U]	25.0	U	66.606	B	P
Lead					· · · · ·						\top
Magnesium											
Manganese											
Mercury	*		•			-					
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium								_			<u> </u>
Zinc											-
Cyanide											

NYSDEC - ASP 3 BLANKS

Lab Name:	MITKEM_CORPO	DRATION	Contract:			
Lab Code:	MITKEM	Case No.:	SAS No.:		SDG No.:	81125
Preparation Bla	ank Matrix (soil/wate	r):	WATER			
Preparation Blank Concentration Units (ug/L or mg/kg):				UG/L		

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

ı	Initial Calib. Blank		Continuing Calibration P Blank (ug/L) ra					Prepa- ration	ration		
Analyte	(ug/L)	C	1	С	2	С	3	C	Blank	С	M
Aluminum											+
Antimony											-
Arsenic											
Barium										_	
Beryllium											
Cadmium											
Calcium											-
Chromium										_	
Cobalt											1
Соррег											1
Iron			25.0	U					39.706	B	P
Lead					*					-+ +	<u> </u>
Magnesium											
Manganese											
Mercury						-					
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

NYSDEC - ASP 7 LABORATORY CONTROL SAMPLE

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Lab Name:	MITKEM_CORPORATI	ON	Contract:	-	
Lab Code:	MITKEM	Case No.:	 SAS No.:	 SDG No.:	81125
Solid LCS Sour	ce:				

Aqueous LCS Source:

HIGH_PURITY_

	Aqu	eous (ug/L)				Solid (mg/kg)		
Analyte	True	Found	%R	True	Found	C	Limits	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron	4550.0	4770.0	104.8					
Lead								
Magnesium								
Manganese								
Mercury								
Nickel					- <u>-</u>			
Potassium				,				
Selenium								
Silver					1			
Sodium								
Thallium								
Vanadium						×		
Zinc								
Cyanide								

NYSDEC - ASP 7 LABORATORY CONTROL SAMPLE

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Maria	Lab Name:	MITKEM_CORPO	DRATION	Contract:	•		
-	Lab Code:	MITKEM	Case No.:	 SAS No.:		SDG No.:	81125
Îm	Solid LCS Source	:e:					

Aqueous LCS Source: HIGH_PURITY_

	Aqı	ieous (ug/L)				Solid (mg/k	g)	
Analyte	True	Found	%R	True	Found	С	Limits	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron	4550.0	4676.1	102.8					
Lead								
Magnesium								
Manganese								
Mercury								
Nickel				1				
Potassium								
Selenium								
Silver								1
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								



* Wet Chemistry *

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Client: LMS Engineering Client ID: SP-1 Lab ID: 81125003			Μ	latrix: Aqueous	
Analvte	Results	Reporting Limit	Units	Analysis <u>Method</u>	Analysis <u>Date</u>
	<u></u>	Jacob Contraction of the Contrac	<u></u>	Motiou	Date
Free CO2	18	10	mg/L	SM4500- CO2C	5/26/01
Nitrate	ND	5*	mg/L	EPA 353.2	5/29/01
Sulfates	48	7	mg/L	SM 4500-SO4 E	5/31/01
TOC	25	2.4	mg/L	EPA 415.1	6/1/01

ND = Not Detected

* Elevated due to matrix sample effects.



Client: Client ID: Lab ID:	LMS Engineering SP-1B 81125004			Ma	atrix: Aqueous	
			Reporting		Analysis	Analysis
Analyte		<u>Results</u>	Limit	Units	Method	Date
Free CO2		39	10	mg/L	SM4500- CO2C	5/26/01

Free CO2	39	10	mg/L	SM4500- CO2C	5/26/01
Nitrate	ND	5*	mg/L	EPA 353.2	5/29/01
Sulfates	27	7	mg/L	SM 4500-SO4 E	5/31/01
TOC	14	2.4	mg/L	EPA 415.1	6/1/01

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ND = Not Detected

* Elevated due to matrix sample effects.

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81125004



Client: LMS Engineering Client ID: SP-2 Lab ID: 81125005	I		M	latrix: Aqueous	
		Reporting		Analysis	Analysis
Analyte	Results	Limit	<u>Units</u>	Method	Date
Free CO2	36	10	mg/L	SM4500- CO2C	5/26/01
Nitrate	ND	5*	mg/L	EPA 353.2	5/29/01
Sulfates	26	7	mg/L	SM 4500-SO4 E	5/31/01
TOC	17	2.4	mg/L	EPA 415.1	6/1/01

ND = Not Detected

* Elevated due to matrix sample effects.



••	LMS Engineering SP-3 81125006			М	atrix: Aqueous	
			Reporting		Analysis	Analysis
Analyte		<u>Results</u>	<u>Limit</u>	<u>Units</u>	Method	Date
Free CO2		11	10	mg/L	SM4500- CO2C	5/26/01
Nitrate		ND	5*	mg/L	EPA 353.2	5/29/01
Sulfates		56	7	mg/L	SM 4500-SO4 E	5/31/01
TOC		11	2.4	mg/L	EPA 415.1	6/1/01

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ND = Not Detected

* Elevated due to matrix sample effects.



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Client: Client ID: Lab ID:	LMS Engineering SP-4 81125007	Matrix: Aqueous				
			Reporting		Analysis	Analysis
Analyte		<u>Results</u>	Limit	<u>Units</u>	Method	Date
Free CO2		39	10	mg/L	SM4500- CO2C	5/26/01
Nitrate		ND	5*	mg/L	EPA 353.2	5/29/01
Sulfates		34	7	mg/L	SM 4500-SO4 E	5/31/01
TOC		14	2.4	mg/L	EPA 415.1	6/1/01

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ND = Not Detected

* Elevated due to matrix sample effects.

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Client: Client ID:	LMS Engineering		,	Matrix	k: Aqueous
Lab ID:	Prep Blank				
			Reporting		Analysis
Analyte		<u>Results</u>	<u>Limit</u>	<u>Units</u>	Method

Free CO2	ND	10	mg/L	SM4500- CO2C	5/26/01
Nitrate	ND	0.1	mg/L	EPA 353.2	5/29/01
Sulfates	ND	7	mg/L	SM 4500-SO4 E	5/31/01
TOC	ND	2.4	mg/L	EPA 415.1	6/1/01

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ND = Not Detected

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81125-PB 59

Analysis <u>Date</u>



Client: LMS Engineering

Matrix: Aqueous

Client ID:

Lab ID: Lab Control Sample

Analyte	% Recovery	Analysis <u>Method</u>	Analysis <u>Date</u>
Free CO2	99	SM4500- CO2C	5/26/01
Nitrate	102	EPA 353.2	5/29/01
Sulfates	87	SM 4500-SO4 E	5/31/01
TOC	106	EPA 415.1	6/1/01

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