



Mr. Robert R. Stewart, Environmental Engineer
New York State Department of Environmental Conservation
Region One Headquarters - Division of Environmental Remediation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, New York 11790-3409

Subject:
2007 Groundwater Monitoring Plan
25 Melville Park Road
Melville, New York

Dear Mr. Stewart:

ARCADIS, on behalf of 25 MPR, LLC, has prepared this 2007 Groundwater Monitoring Plan (Plan) for the 25 Melville Park Road Site (hereinafter referred to as the "Site") in Melville, New York. ARCADIS submitted a Final Engineering Report (FER) to the agencies on June 29, 2006. In a letter dated September 22, 2006, the New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), and Suffolk County Department of Health Services (SCDHS) provided joint comments on the FER. The September 22, 2006 letter indicated that a long-term groundwater monitoring plan is to be prepared and submitted to the agencies after the 2006 4th Quarter groundwater monitoring data are available. The FER indicated that the proposed performance monitoring programs were prepared for an operational period of one year (i.e., 2006) and were based on ARCADIS' current understanding of groundwater advective transport times. The FER also indicated that the Year 2 (i.e., 2007) performance monitoring events would be developed after the Year 1 (i.e., 2006) data have been evaluated.

This Plan outlines the proposed 2007 performance monitoring events. The results of the 2006 4th Quarter groundwater monitoring event are discussed in Progress Report 52. The 2007 performance monitoring events were developed based on an evaluation of the 2006 groundwater monitoring data and have been prepared for an operational period of one year. A long-term groundwater monitoring plan will be developed in early 2008 after the 2007 groundwater monitoring data have been evaluated.

Imagine the result

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ENVIRONMENT

Date:
March 9, 2007

Contact:
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Our ref:
NY001332.0011.00004

Consistent with the 2006 performance monitoring, in-situ reactive zone (IRZ) performance monitoring will be conducted using a subset of existing monitoring wells that were selected to monitor the effectiveness of the full-scale IRZ. The locations of the IRZ performance monitoring wells are shown on Figure 1. Construction specifications for wells in the IRZ performance monitoring program are provided in Table 1. A description of the performance monitoring well network for the source area and downgradient IRZs is provided in the FER. Source area IRZ performance monitoring will be completed on a quarterly basis following the proposed monitoring schedule provided in Table 2. Downgradient IRZ performance monitoring will be completed on a quarterly basis following the proposed monitoring schedule provided in Table 3. Compliance and deep zone monitoring will be completed on a quarterly, semi-annual, and annual basis following the proposed monitoring schedule provided in Table 4.

The Year 1 Quarters 2, 3, and 4 source area IRZ performance monitoring events included monitoring of deep zone wells (MW-18D, MW-20D, and the former diffusion well) to monitor concentration changes beneath the source area during the first year of operation of the source area IRZ (see Progress Report 52). VOC concentrations in deep zone monitoring well MW-18D slightly decreased or remained stable between the September 2006 (Quarter 3) and December 2006 (Quarter 4) sampling events. VOC concentrations in deep zone monitoring well MW-20D remained stable between the June 2006 (Quarter 2) and December 2006 (Quarter 4) sampling events. These data indicate that VOC concentrations in deep zone monitoring wells MW-18D and MW-20D have remained relatively stable in the context of historical VOC concentration trends and have not significantly changed as a result of the operation of the source area IRZ. VOC concentrations in the former diffusion well significantly decreased between the September 2006 (Quarter 3) and December 2006 (Quarter 4) sampling events. In addition, total organic carbon (TOC) was not observed in the former diffusion well as evidenced by data collected during the September 2006 (Quarter 3) and December 2006 (Quarter 4) sampling events. The TOC data collected from the former diffusion well indicate that the reagent injections are not migrating vertically beneath the target zone. Based on the deep zone monitoring that was conducted during Year 1, deep zone monitoring should be conducted on a semi-annual basis during Year 2.

Passive diffusion bag (PDB) samplers will continue to be used for the collection of volatile organic compound (VOC) and light hydrocarbons (ethene, ethane, and methane) samples in the majority of the monitoring wells. Low-flow groundwater sampling will be conducted in shallow angle monitoring well IW-24 and intermediate

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angle monitoring well IW-25 based on the construction of these wells and the inability to deploy PDB samplers in these wells. Since difficulties have been encountered placing pumps in the screen intervals of the angle monitoring wells, a bottom intake pump (Hurricane pump) will be lowered to the top of the screen interval so that the pump intake is placed in the top few feet of the screen interval.

Should you have any questions or comments to this Plan, please do not hesitate to contact me at (631) 391-5244.

Sincerely,

ARCADIS of New York, Inc.



Steven M. Feldman
Project Manager

Copies:

Lawrence Levine, 25 MPR, LLC
Sharon McLelland, NYSDOH
Geraldynn Rosser, SCDHS
Denise D'Ambrosio, NYSDEC
Doug Romer, Archon Group, LP
File

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Table 1. Injection and Monitoring Well Construction Details, 25 Melville Park Road Site, Melville, New York.

Well Designation	Well Diameter (inches)	Screened Interval (feet bls)	Total Depth (feet bls)	Vertical Zone Designation	Notes
IW-1	2	45 to 60	60	Shallow Zone	Existing Well
IW-2	2	45 to 60	60	Shallow Zone	Existing Well
IW-3	2	45 to 60	60	Shallow Zone	Existing Well
IW-4	2	45 to 60	60	Shallow Zone	Existing Well
IW-5	2	45 to 60	60	Shallow Zone	Existing Well
IW-6	2	45 to 60	60	Shallow Zone	Existing Well
IW-7	2	45 to 60	60	Shallow Zone	Existing Well
IW-8	2	75 to 90	90	Intermediate Zone	Existing Well
IW-9	2	75 to 90	90	Intermediate Zone	Existing Well
IW-10	2	75 to 90	90	Intermediate Zone	Existing Well
IW-11	2	75 to 90	90	Intermediate Zone	Existing Well
IW-12	2	75 to 90	90	Intermediate Zone	Existing Well
IW-13	2	75 to 90	90	Intermediate Zone	Existing Well
IW-14	2	60 to 75	75	Intermediate Zone	Existing Well
IW-15	2	60 to 75	75	Intermediate Zone	Existing Well
IW-16	2	45 to 60	60	Shallow Zone	Existing Well
IW-17	2	50 to 70	70	Shallow Zone	Existing Well
IW-18	2	70 to 100	100	Intermediate Zone	Existing Well
IW-19	2	50 to 70	70	Shallow Zone	Existing Well
IW-20	2	70 to 100	100	Intermediate Zone	Existing Well
IW-21	2	50 to 70	70	Shallow Zone	Existing Well
IW-22	2	50 to 70	70	Shallow Zone	Existing Well
IW-23	2	70 to 100	100	Intermediate Zone	Existing Well
IW-24*	2	56 to 75	75	Shallow Zone	Existing Well
IW-25*	2	77 to 97	97	Intermediate Zone	Existing Well
IW-26*	2	56 to 75	75	Shallow Zone	Existing Well
IW-27*	2	77 to 97	97	Intermediate Zone	Existing Well
MW-1	4	40 to 60	60	Shallow Zone	Existing Well
MW-2	4	40 to 60	60	Shallow Zone	Existing Well
MW-3	4	40 to 60	60	Shallow Zone	Existing Well
MW-4	4	40 to 60	60	Shallow Zone	Existing Well
MW-5	4	40 to 60	60	Shallow Zone	Existing Well
MW-6	4	40 to 60	60	Shallow Zone	Existing Well
MW-7	2	40 to 60	60	Shallow Zone	Existing Well

Footnotes on last page.

Table 1. Injection and Monitoring Well Construction Details, 25 Melville Park Road Site, Melville, New York.

Well Designation	Well Diameter (inches)	Screened Interval (feet bls)	Total Depth (feet bls)	Vertical Zone Designation	Notes
MW-8	2	40 to 60	60	Shallow Zone	Existing Well
MW-9	2	40 to 60	60	Shallow Zone	Existing Well
MW-10	2	40 to 60	60	Shallow Zone	Existing Well
MW-11	2	40 to 60	60	Shallow Zone	Existing Well
MW-12	2	46.5 to 56.5	56.5	Shallow Zone	Existing Well
MW-13	2	48 to 58	58	Shallow Zone	Existing Well
MW-13D	2	80 to 90	90	Intermediate Zone	Existing Well
MW-14	2	46 to 56	56	Shallow Zone	Existing Well
MW-15	2	48.5 to 58.5	58.5	Shallow Zone	Existing Well
MW-16D	2	79.5 to 89.5	89.5	Intermediate Zone	Existing Well
MW-17	2	50 to 60	60	Shallow Zone	Existing Well
MW-18D	4	133 to 143	143	Deep Zone	Existing Well
MW-19D	4	160 to 170	170	Deep Zone	Existing Well
MW-20D	4	175 to 185	185	Deep Zone	Existing Well
MW-21D	4	50 to 160	160	---	Abandoned Well
MW-22D	4	48 to 138	138	---	Abandoned Well
MW-23	2	70 to 85	85	Intermediate Zone	Existing Well
MW-24	2	45 to 60	60	Shallow Zone	Existing Well
MW-25D	4	40 to 55	90	Shallow Zone	Existing Well
	4	75 to 90	90	Intermediate Zone	Existing Well
MW-26D	4	35 to 50	85	Shallow Zone	Existing Well
	4	70 to 85	85	Intermediate Zone	Existing Well
MW-27D	4	40 to 55	90	Shallow Zone	Existing Well
	4	75 to 90	90	Intermediate Zone	Existing Well
MW-28D	4	40 to 55	90	Shallow Zone	Existing Well
	4	75 to 90	90	Intermediate Zone	Existing Well
MW-29	2	45 to 60	60	Shallow Zone	Existing Well
MW-30	4	75 to 90	90	Intermediate Zone	Existing Well
MW-31	4	60 to 70	70	Shallow Zone	Existing Well
MW-32	4	45 to 60	60	Shallow Zone	Existing Well
MW-33	4	70 to 85	85	Intermediate Zone	Existing Well
MW-34	4	70 to 80	80	Intermediate Zone	Existing Well
MW-35	4	70 to 80	80	Intermediate Zone	Existing Well
Former Diffusion Well	6	108 to 116	116	Deep Zone	Existing Well

bls Below land surface.

* Denotes angle well.

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Table 2. Summary of Year 2 Source Area IRZ Performance Monitoring, 25 Melville Park Road Site, Melville, New York.

		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 1 Performance Monitoring	S	IW-26	--	--	--	--	L	F
		IW-24	--	--	--	--	L	F
		IW-17	L	L	L	L	L	F
		MW-13	L	L	L	L	L	F
	I	IW-27	--	--	--	--	L	F
		IW-25	--	--	--	--	L	F
		IW-18	L	L	L	L	L	F
		MW-13D	L	L	L	L	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 2 Performance Monitoring	S	IW-26	--	--	--	--	L	F
		IW-24	--	--	--	--	L	F
		IW-22	L	L	L	L	L	F
		IW-17	L	L	L	L	L	F
		IW-2	--	--	--	--	L	F
		MW-13	L	L	L	L	L	F
	I	IW-27	--	--	--	--	L	F
		IW-25	--	--	--	--	L	F
		IW-23	L	L	L	L	L	F
		IW-18	L	L	L	L	L	F
		IW-8	--	--	--	--	L	F
		MW-13D	L	L	L	L	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 3 Performance Monitoring	S	IW-26	--	--	--	--	L	F
		IW-24	--	--	--	--	L	F
		IW-17	L	L	L	L	L	F
		MW-13	L	L	L	L	L	F
	I	IW-27	--	--	--	--	L	F
		IW-25	--	--	--	--	L	F
		IW-18	L	L	L	L	L	F
		MW-13D	L	L	L	L	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 4 Performance Monitoring	S	IW-26	--	--	--	--	L	F
		IW-24	L	--	--	--	L	F
		IW-22	L	L	L	L	L	F
		IW-17	L	L	L	L	L	F
		IW-2	L	L	L	L	L	F
		MW-13	L	L	L	L	L	F
	I	IW-27	--	L	L	L	L	F
		IW-25	L	L	L	L	L	F
		IW-23	L	L	L	L	L	F
		IW-18	L	L	L	L	L	F
		IW-8	L	L	L	L	L	F
		MW-13D	L	L	L	L	L	F

Notes:

VOCs - Volatile Organic Compounds

TOC - Total Organic Carbon

I - Intermediate Zone Injection or Monitoring Well

L - Laboratory analysis

F - Field Measurement using a water quality meter

S - Shallow Zone Injection or Monitoring Well

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Table 3. Summary of Year 2 Downgradient IRZ Performance Monitoring, 25 Melville Park Road Site, Melville, New York.

		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 1 Performance Monitoring	S	IW-6	--	--	--	--	L	F
		MW-32	L	--	--	--	L	F
		MW-7	--	--	--	--	L	F
		MW-29	L	L	L	L	L	F
	I	IW-10	--	--	--	--	L	F
		IW-15	--	--	--	--	L	F
		MW-33	L	--	--	--	L	F
		MW-27D	L	L	L	L	L	F
		MW-30	L	L	L	L	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 2 Performance Monitoring	S	IW-6	--	--	--	--	L	F
		MW-32	L	--	--	--	L	F
		MW-7	L	--	--	--	L	F
		MW-29	L	L	L	L	L	F
	I	IW-10	--	--	--	--	L	F
		IW-15	--	--	--	--	L	F
		MW-33	L	--	--	--	L	F
		MW-27D	L	L	L	L	L	F
		MW-30	L	L	L	L	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 3 Performance Monitoring	S	IW-6	--	--	--	--	L	F
		MW-7	--	--	--	--	L	F
		MW-29	L	L	L	L	L	F
	I	IW-10	--	--	--	--	L	F
		IW-15	--	--	--	--	L	F
		MW-33	L	--	--	--	L	F
		MW-27D	L	L	L	L	L	F
		MW-30	L	L	L	L	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 4 Performance Monitoring	S	IW-6	--	--	--	--	L	F
		MW-32	L	--	--	--	L	F
		MW-7	L	--	--	--	L	F
		MW-29	L	--	--	--	L	F
	I	IW-10	--	--	--	--	L	F
		IW-15	--	--	--	--	L	F
		MW-33	L	--	--	--	L	F
		MW-27D	L	L	L	L	L	F
		MW-30	L	L	L	L	L	F

Notes:

VOCs - Volatile Organic Compounds

TOC - Total Organic Carbon

I - Intermediate Zone Injection or Monitoring Well

L - Laboratory analysis

F - Field Measurement using a water quality meter

S - Shallow Zone Injection or Monitoring Well

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Table 4. Summary of Year 2 Compliance, Annual and Deep Zone Monitoring, 25 Melville Park Road Site, Melville, New York.

		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 1 Compliance Monitoring	S	MW-31	L	L	L	L	L	F
	I	MW-16D	L	L	L	L	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 2 Compliance Monitoring	S	MW-31	L	L	L	L	L	F
	I	MW-16D	L	L	L	L	L	F
	D	MW-18D	L	--	--	--	--	--
		MW-19D	L	--	--	--	--	--
		MW-20D	L	--	--	--	--	--
		FDW	L	--	--	--	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 3 Compliance Monitoring	S	MW-31	L	L	L	L	L	F
	I	MW-16D	L	L	L	L	L	F
		Well	Analysis/Parameter					
			VOCs	Ethene	Ethane	Methane	TOC	pH
Year 2, Quarter 4 Compliance Monitoring	S	MW-31	L	L	L	L	L	F
		MW-3	L	L	L	L	L	F
		MW-4	L	L	L	L	L	F
		MW-1*	L	--	--	--	--	--
		MW-2*	L	--	--	--	--	--
		MW-11*	L	--	--	--	--	--
		MW-14*	L	--	--	--	--	--
		MW-15*	L	--	--	--	--	--
	I	MW-16D	L	L	L	L	L	F
		MW-34	L	L	L	L	L	F
		MW-35	L	L	L	L	L	F
	D	MW-18D	L	--	--	--	--	--
		MW-19D	L	--	--	--	--	--
		MW-20D	L	--	--	--	--	--
		FDW	L	--	--	--	L	F

Notes:

VOCs - Volatile Organic Compounds

TOC - Total Organic Carbon

I - Intermediate Zone Injection or Monitoring Well

D - Deep Zone Monitoring Well

* Denotes a well sampled annually.

L - Laboratory analysis

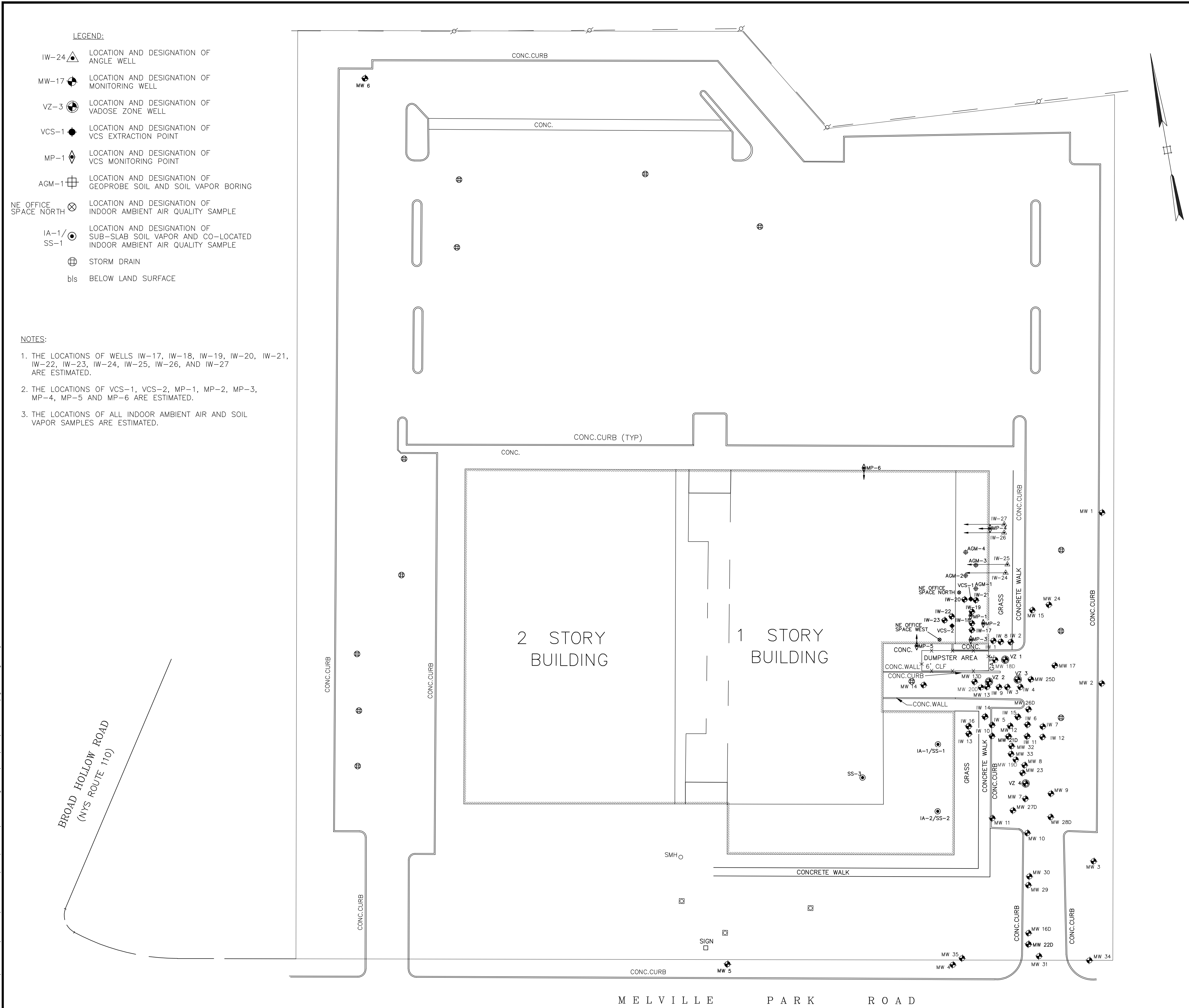
F - Field Measurement using a water quality meter

S - Shallow Zone Injection or Monitoring Well

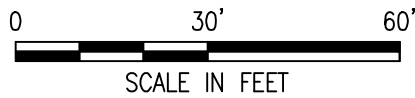
FDW - Former Diffusion Well

Date/Time : Tue, 13 Feb 2007 - 4:53pm
Path/Name : C:\PROJECT\WHS Melville Correspondence\WVSEEC Progress Reports\2006\4th Quarter\Figure 1.dwg - Layout Tab : IRZ_WELLS

Acad Version : R17.0s (LMS Tech)
User Name : olanchez



Well Designation	Well Diameter (inches)	Screened Interval (feet bis)	Total Depth (feet bis)	Vertical Zone Designation
IW-1	2	45 to 60	60	Shallow Zone
IW-2	2	45 to 60	60	Shallow Zone
IW-3	2	45 to 60	60	Shallow Zone
IW-4	2	45 to 60	60	Shallow Zone
IW-5	2	45 to 60	60	Shallow Zone
IW-6	2	45 to 60	60	Shallow Zone
IW-7	2	45 to 60	60	Shallow Zone
IW-8	2	75 to 90	90	Intermediate Zone
IW-9	2	75 to 90	90	Intermediate Zone
IW-10	2	75 to 90	90	Intermediate Zone
IW-11	2	75 to 90	90	Intermediate Zone
IW-12	2	75 to 90	90	Intermediate Zone
IW-13	2	75 to 90	90	Intermediate Zone
IW-14	2	60 to 75	75	Intermediate Zone
IW-15	2	60 to 75	75	Intermediate Zone
IW-16	2	45 to 60	60	Shallow Zone
IW-17	2	50 to 70	70	Shallow Zone
IW-18	2	70 to 100	100	Intermediate Zone
IW-19	2	50 to 70	70	Shallow Zone
IW-20	2	70 to 100	100	Intermediate Zone
IW-21	2	50 to 70	70	Shallow Zone
IW-22	2	50 to 70	70	Shallow Zone
IW-23	2	70 to 100	100	Intermediate Zone
IW-24	2	56 to 75	75	Shallow Zone
IW-25	2	77 to 97	97	Intermediate Zone
IW-26	2	56 to 75	75	Shallow Zone
IW-27	2	77 to 97	97	Intermediate Zone
MW-1	4	40 to 60	60	Shallow Zone
MW-2	4	40 to 60	60	Shallow Zone
MW-3	4	40 to 60	60	Shallow Zone
MW-4	4	40 to 60	60	Shallow Zone
MW-5	4	40 to 60	60	Shallow Zone
MW-6	4	40 to 60	60	Shallow Zone
MW-7	2	40 to 60	60	Shallow Zone
MW-8	2	40 to 60	60	Shallow Zone
MW-9	2	40 to 60	60	Shallow Zone
MW-10	2	40 to 60	60	Shallow Zone
MW-11	2	40 to 60	60	Shallow Zone
MW-12	2	46.5 to 56.5	56.5	Shallow Zone
MW-13	2	48 to 58	58	Shallow Zone
MW-13D	2	80 to 90	90	Intermediate Zone
MW-14	2	46 to 56	56	Shallow Zone
MW-15	2	48.5 to 58.5	58.5	Shallow Zone
MW-16D	2	79.5 to 89.5	89.5	Intermediate Zone
MW-17	2	50 to 60	60	Shallow Zone
MW-18D	4	133 to 143	143	Deep Zone
MW-19D	4	160 to 170	170	Deep Zone
MW-20D	4	175 to 185	185	Deep Zone
MW-21D	4	50 to 160	160	Abandoned
MW-22D	4	48 to 138	138	Abandoned
MW-23	2	70 to 85	85	Intermediate Zone
MW-24	2	45 to 60	60	Shallow Zone
MW-25D	4	40 to 55	90	Shallow Zone
	4	75 to 90	90	Intermediate Zone
MW-26D	4	35 to 50	85	Shallow Zone
	4	70 to 85	85	Intermediate Zone
MW-27D	4	40 to 55	90	Shallow Zone
	4	75 to 90	90	Intermediate Zone
MW-28D	4	40 to 55	90	Shallow Zone
	4	75 to 90	90	Intermediate Zone
MW-29	2	45 to 60	60	Shallow Zone
MW-30	4	75 to 90	90	Intermediate Zone
MW-31	4	60 to 70	70	Shallow Zone
MW-32	4	45 to 60	60	Shallow Zone
MW-33	4	70 to 85	85	Intermediate Zone
MW-34	4	70 to 80	80	Intermediate Zone
MW-35	4	70 to 80	80	Intermediate Zone



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NO.	ISSUED DATE	REVISION DESCRIPTION	BY/CKD

KEYPLAN

SEAL



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PROJECT TITLE

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

25 MPR, L.L.C.

PROJECT MANAGER
S. FELDMAN

DEPARTMENT MANAGER
N. VALKENBURG

LEAD DESIGN PROF.

CHECKED BY
C. KEEN

SHEET TITLE

WELL LOCATION MAP

TASK/PHASE NUMBER

00004

DRAWN BY
A. SANCHEZ

PROJECT NUMBER

NY001332.0011

DRAWING NUMBER

1