

TABLES

**Table 1-1
Summary of Compliance
October 2005**

Extraction Well Network	Compliance Criteria Met (yes/no)	Comments
Flow Rate Performance - Target Extraction Rate		
Newmark North Extraction Well Network	No	The City is unable to sustain the three month rolling average Target Extraction Rate for the Newmark North extraction well network (see Table 2-3). A letter informing the EPA and DTSC of this condition was sent out on July 25, 2005. An evaluation of the conditions causing this flow rate variance will be submitted.
Newmark Plume Front Extraction Well Network	NA	Flow rate performance criteria are not applicable until the Muscoy OU is declared Operational and Functional
Muscoy Plume Extraction Well Network	NA	Flow rate performance criteria are not applicable until the Muscoy OU is declared Operational and Functional
Flow Performance - Particle Tracking		
Newmark Plume Front Extraction Well Network	NA	Flow performance criteria for the Newmark OU IRA are not applicable until particle tracking methodology is established in an approved Operational Sampling and Analysis Plan
Muscoy Plume Extraction Well Network	NA	Flow performance criteria are not applicable until the Muscoy OU is declared Operational and Functional
Contaminant Performance - Downgradient Monitoring Wells		
Newmark Plume Front Extraction Well Network	NA	The first monitoring well sampling round for evaluating contaminant performance will be conducted in November 2005
Muscoy Plume Extraction Well Network	NA	Contaminant performance criteria are not applicable until the Muscoy OU is declared Operational and Functional

Notes:

NA - not applicable (see comment for reason)

**Table 2-1
Summary of Newmark OU O&M - Extraction Wells**

Reporting Period: October 1, 2005 - October 31, 2005
 System Operation Date: October 1, 2000
 Operations Completed: 6 years 1 months

Newmark North Plant Extraction Well Network (EPA 006, EPA 007, Newmark 3)	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report), monthly hands on physical, annual oil change, semi-annual check of VFD
Description of Problems Encountered	EPA 006 is operating on an approximate 12 hour daily schedule due to the pump breaking suction after extended pumping periods. The pump was last tested on June 30, 2005. Newmark Well 3 failed 10-16-05 from (0141 am - 0737 am) , 10-19-05 (0130am - 0743am), 10-20-05 (009am - 1004 am) due to failing relay
Description of Process Improvements Implemented	None
Deviations from the Operational Requirements of the Consent Decree	Unable to meet the three month rolling average Target Extraction Rate (see the letter to the EPA/DTSC dated July 25, 2005).
Newmark Plume Front Extraction Well Network (EPA 001, EPA 002, EPA 003, EPA 004, EPA 005)	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report), monthly hands on physical, annual oil change, semi-annual check of VFD
Description of Problems Encountered	None
Description of Process Improvements Implemented	None
Deviations from the Operational Requirements of the Consent Decree	None

**Table 2-2
Summary of Extraction Well Flow Data
October 2005**

Extraction Well ⁽²⁾	Monthly Extracted Water Volumes (acre-ft)	Average Monthly Flow Rate (gpm)	Cumulative Volume Extracted ⁽¹⁾ (acre-ft)	Number of Days in Month =	31
				Monthly Run Time (days)	Monthly Down Time (days)
Newmark North Plant Extraction Well Network					
EPA 006	55.3	404	3,433	15.5	15.5
EPA 007	185.9	1,357	7,410	30.7	0.3
Newmark 3	119.0	869	5,162	29.7	1.3
Network Total	360.3	2,630	16,005		
Newmark Plume Front Extraction Well Network					
EPA 001	199.3	1,455	9,807	30.1	0.9
EPA 002	196.0	1,430	10,883	29.4	1.6
EPA 003	205.6	1,500	12,479	30.8	0.2
EPA 004	209.8	1,531	11,707	29.9	1.1
EPA 005	204.4	1,492	10,559	29.7	1.3
Network Total	1015.0	7,409	55,435		

Notes:

Per the terms of the Statement of Work, once Muscoy is declared O&F the City will be required to demonstrate flow compliance with each extraction well networks Target Extraction Rates considering the specified maintenance allowances. At such time the City will provide the supporting calculations in a tabular format.

NA - Not available

(1) - Cumulative volume extracted since Newmark OU System Operations Date (October 1, 2000)

**Table 2-3
Three Month Rolling Average Extraction Volume and Extraction Rate Calculations
October 2005**

Extraction Well	Run Times (Days)				Total Down Time For Last Three Months	Extraction Volumes (acre ft)				Extraction Rates (gpm)			
	August 2005	September 2005	October 2005	Total For Last Three Months		August 2005	September 2005	October 2005	Total Pumpage Last Three Months	Three Month Rolling Average Extraction Rate	Design Extraction Rate (DER)	Target Extraction Rate (TER) ⁽¹⁾	Difference Between Three Month Rolling Average and TER
Days in Period >>	31	30	31	92									
Newmark North Plant Extraction Well Network⁽³⁾													
EPA 006 ⁽²⁾	15.7	14.8	15.5	46.0	46.0	49.9	50.3	55.3	155.6				
EPA 007	31.1	29.9	30.7	91.6	0.4	180.9	177.7	185.9	544.5				
Newmark 3	31.2	29.9	29.7	90.8	1.2	118.2	117.7	119.0	355.0				
Network Total						349.0	345.8	360.3	1055.1	2594.9	3900.0	3529.1	-934.2

Notes:

NA - Not Applicable

(1) TERs are adjusted for the maintenance allowance.

(2) This extraction well can only be operated 12 hours a day in order to avoid pump cavitation created by the depleted aquifer conditions.

CD Consent Decree

DER Design Extraction Rate

gpm gallons per minute

O&F Operable and Functional

SOW Statement of Work (entered with CD March 23, 2005)

TER Target Extraction Rate

**Table 2- 4
Extraction Well Monitoring Results - PCE and TCE
October 2005**

Extraction Well	Date Sampled	PCE Concentration (µg/L)	TCE Concentration (µg/L)
Newmark North Extraction Well Network			
EPA 006	No Samples collected during the reporting period	NM	NM
EPA 007	No Samples collected during the reporting period	NM	NM
Newmark 3	No Samples collected during the reporting period	NM	NM
Newmark Plume Front Extraction Well Network			
EPA 001	No Samples collected during the reporting period	NM	NM
EPA 002	No Samples collected during the reporting period	NM	NM
EPA 003	No Samples collected during the reporting period	NM	NM
EPA 004	No Samples collected during the reporting period	NM	NM
EPA 005	No Samples collected during the reporting period	NM	NM

Notes:

These data have been collected and validated using standard SBMWD protocol as required under SBMWDs DHS Permit. Once the project QA/QC Plan has been prepared and approved, SBMWD will adhere to the QA/QC plan when sampling the extraction wells and validating laboratory data.
 NM - Not monitored during the reporting period

**Table 3-1
Summary of Newmark OU O&M - GAC Treatment Plants**

Reporting Period: October 1, 2005 - October 31, 2005
 System Operation Date: October 1, 2000
 Operations Completed: 6 years 1 months

Newmark North GAC Treatment Plant	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report)
Description of Problems Encountered	1. Encountering trouble with lifting vault lids for Chlorine injection/Cla-valve. Lids are extremely difficult to open. 2. GAC vessels 1-7B showing break through of VOC's
Description of Process Improvements Implemented	1. No corrective action seen for above vaults. 2. Installed new carbon in 7 lead vessels. 140,000 pounds total. Vessels 1-6 showing positive results for total coliform after new carbon installation. Caustic scrub vessels 1-6 problem corrected.
Deviations from the Operational Requirements of the Consent Decree	None
17th Street GAC Treatment Plant	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report)
Description of Problems Encountered	None
Description of Process Improvements Implemented	None
Deviations from the Operational Requirements of the Consent Decree	None
Waterman GAC Treatment Plant	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report)
Description of Problems Encountered	Encountering trouble with lifting vault lids for Chlorine injection/Cla-valve lids are extremely difficult to open.
Description of Process Improvements Implemented	No corrective action seen for above vaults.
Deviations from the Operational Requirements of the Consent Decree	None

**Table 3-2
Summary of Treatment Plant Flow Data and Mass Removal Estimates
October 2005**

Treatment Plant	Extraction Wells Treated By Plant	Treated Water Volumes (acre-ft)	Average Monthly Flow Rate (gpm)	Estimated Monthly GAC Mass Removal ⁽¹⁾ (lbs)	Estimated Cumulative GAC Mass Removal ⁽²⁾ (lbs)
Newmark North GAC Treatment Plant	EPA 006, EPA 007 and Newmark 3	360.3	2,630	4.5	277.7
17th Street GAC Treatment Plant	EPA 003	205.6	1,500	2.8	191.5
Waterman GAC Treatment Plant ⁽³⁾	EPA 002, EPA 004 and EPA 005	610.1	4,453	5.3	468.9
Total		1176.0	8583.4	12.6	938.1

Notes:

(1) - Monthly mass removal estimates are based on Monthly Treatment Summary sheets documented in monthly DHS reports.

(2) - Cumulative mass removal estimates are for the period since Newmark was declared O&F (October 1, 2000). The historical estimate prior to Consent decree entry is based on a combination of carbon life loading history data and Monthly Treatment Summary spreadsheet.

(3) - Since the beginning of March extracted groundwater from EW-1 has been diverted to the 19th Street Treatment Plant. Therefore, the sum of volume of groundwater extracted from Newmark OU wells is different then the sum of the volume treated by the Newmark OU treatment plants.

**Table 3-3
Treatment Plant Monitoring Results - PCE and TCE
October 2005**

Extraction Well	Date Sampled	PCE Concentration (µg/L)	TCE Concentration (µg/L)
Newmark North GAC Treatment Plant			
Influent	24-Oct-05	3.4	<0.5
Lead Vessel 1	24-Oct-05	<0.5	<0.5
Lead Vessel 2	24-Oct-05	<0.5	<0.5
Lead Vessel 3	24-Oct-05	<0.5	<0.5
Lead Vessel 4	24-Oct-05	<0.5	<0.5
Lead Vessel 5	24-Oct-05	<0.5	<0.5
Lead Vessel 6	24-Oct-05	<0.5	<0.5
Lead Vessel 7	24-Oct-05	<0.5	<0.5
Combined Effluent	6-Oct-05	<0.5	<0.5
	13-Oct-05	<0.5	<0.5
	20-Oct-05	<0.5	<0.5
	24-Oct-05	<0.5	<0.5
17th Street GAC Treatment Plant			
Influent	24-Oct-05	0.6	<0.5
Lead Vessel 1	6-Oct-05	4.2	1.4
	13-Oct-05	4.0	1.4
	20-Oct-05	3.9	1.2
	24-Oct-05	4.2	1.3
Lead Vessel 2	6-Oct-05	4.7	1.4
	13-Oct-05	4.4	1.3
	20-Oct-05	4.3	1.4
	24-Oct-05	4.6	1.5
Lead Vessel 3	6-Oct-05	4.8	1.4
	13-Oct-05	4.8	1.4
	20-Oct-05	4.4	1.3
	24-Oct-05	4.7	1.4
Combined Effluent	6-Oct-05	<0.5	<0.5
	13-Oct-05	<0.5	<0.5
	20-Oct-05	<0.5	<0.5
	24-Oct-05	<0.5	<0.5
Waterman GAC Treatment Plant			
Influent	24-Oct-05	2.4	0.7
Lead Vessel 1	24-Oct-05	2.0	1.2
Lead Vessel 2	24-Oct-05	1.2	1.0
Lead Vessel 3	24-Oct-05	2.0	1.1
Lead Vessel 4	24-Oct-05	2.9	1.3
Lead Vessel 5	24-Oct-05	2.2	1.2
Lead Vessel 6	24-Oct-05	3.0	2.0
Lead Vessel 7	24-Oct-05	2.5	1.1
Lead Vessel 8	24-Oct-05	2.6	1.1
Combined Effluent	6-Oct-05	<0.5	<0.5
	13-Oct-05	<0.5	<0.5
	20-Oct-05	<0.5	<0.5
	24-Oct-05	<0.5	<0.5

Notes:

These data have been collected and validated using standard SBMWD protocol as required under SBMWDs DHS Permit. Once the project QA/QC Plan has been prepared and approved, SBMWD will adhere to the QA/QC plan when sampling the extraction wells and validating data.

NM - Not monitored during the reporting period

**Table 4-1
Summary of Newmark OU O&M - Water Level Monitoring**

Reporting Period: October 1, 2005 - October 31, 2005
System Operation Date: October 1, 2000
Operations Completed: 6 years 1 months

Newmark and Muscoy OU Monitoring Wells	
Description Routine Monitoring and Maintenance Performed	Periodic download of RTU based water level data and RTU hardware, software and sensors checks. Collection of manual water levels to verify RTU based readings.
Description of Problems Encountered	MW10 and MW16 had defective telemetry radios. Radios were replaced.
Description of Process Improvements Implemented	Modified the RTU software to add reference elevation and transducer depth to the daily water log information.
Deviations from the Operational Requirements of the Consent Decree	None. Daily water level readings were collected each day as required by the SOW.
Newmark and Muscoy OU Extraction Wells	
Description Routine Monitoring and Maintenance Performed	Periodic downloaded water level data from RTUs as part of the completion of the Muscoy OU startup aquifer testing (per the schedule in the EPA/URS Field Sampling Plan) and less frequently for extraction wells monitored as part of Newmark OU IRA operations.
Description of Problems Encountered	EPA110 RTU telemetry radio had a software glitch causing a no communication problem. Radio was reset, clearing the fault.
Description of Process Improvements Implemented	Modified the RTU software to add reference elevation and transducer depth to the daily water log information.
Deviations from the Operational Requirements of the Consent Decree	None
Site-Wide Monitoring Wells	
Description Routine Monitoring and Maintenance Performed	Collected monthly manual water level measurements on October 24, 2005
Description of Problems Encountered	The City is unable to collect Site-Wide manual water levels from some of the wells designated in the SOW due to access limitations, water level depths beyond the length of the sounding tape or omissions. In addition the City has not been able to locate one well (PZ125) it appears the well has been paved over.
Description of Process Improvements Implemented	Instituted a new electronic field data entry form to query collection of data from the entire well list and minimize data entry errors. New field form also helps to assure that a basic set of information will be collected site-wide and provides standard comments and notes to more accurately determine the extent and nature of work completed at each site during the monitoring period. Completed a field verification of surveyed elevations and measuring points used during monitoring. Where these differed, the elevation offsets were measured and used to estimate the elevation of the actual measurement reference point. The revised reference elevations were entered into the new electronic data entry field form.
Deviations from the Operational Requirements of the Consent Decree	The Site-Wide manual water levels were not collected from the following wells: MW 126 (well appears to be dry), PZ-124 (well appears to be dry), PZ 125 (well appears to have been paved over) Muscoy Mutual No. 5 (air line installed by Muscoy Mutual prevents the lowering of the sounding tape and we are not authorized to remove, MW Paperboard (depth to water beyond the length of the water level measuring tape in September).
Wells Monitored Voluntarily	
Description of Routine Monitoring and Maintenance Performed	Collected monthly manual water level measurements. Downloaded electronic water level data from USGS website.
Description of Problems Encountered	31st and Mt View is located in a confined space, the City is in the process of developing an alternative measuring method to monitor this well.

Note:

**Table 6-1
Schedule of Upcoming O&M, Monitoring and Reporting Events
October-05**

Task/Item	Planned Event
Newmark OU Extraction Wells	
Pump/Well Maintenance	Pumping equipment change out EPA 003 - anticipated December 2005
Electrical/Controller Maintenance	Routine
SCADA System and RTU System Maintenance	Continued work on RTU - SCADA communications and system reliability, changing radio frequency. Troubleshoot and repair RTUs and RTU programming as needed.
Extraction Well Monitoring	Download water level data and check RTU offsets.
Other	None
Newmark OU Treatment Plants	
Carbon Change Outs	Change out 17th Street "A" Vessels
Electrical/Controller Maintenance	None
SCADA System and RTU System Maintenance	None
Treatment System Monitoring	Routine treatment plant sampling
Other	None
Monitoring Wells	
SCADA System and RTU System Maintenance	Continued work on RTU - SCADA communications and system reliability. Troubleshoot and repair RTUs and RTU programming as needed.
Water Level Monitoring - SCADA Wells	Download water level data and check elevation offsets. Troubleshoot and repair transducers as needed.
Water Level Monitoring - Site-Wide Well	Collect monthly manual water levels
Monitoring Well sampling	Semi-annual diffusion bag sampling scheduled for November 2005. EPA/URS sampling will be performed in support of Muscoy OU one-year performance evaluation.
Other	None
Project Documents	
Progress Report - November 2005	Scheduled to be submitted December 31, 2005.
QA/QC and OSAP Plans	Scheduled submittal date based on April 5, 2005 receipt of Site Wide QA/QC plan is October 5, 2005. The City has submitted a request for extension of time until November 7, 2005.
Community Relations	
Fact Sheets	None planned
Community Meetings	None planned

**Table 6-2
Submittal of Deliverables/Documents For 2005**

Deliverable	Date Submitted	Status
Groundwater Modeling Work Plan	April 15, 2005	Approved by EPA in Correspondence Dated May 26, 2005
Transmittal of Treatment Plant and Extraction Well Flow Data - March/April 2005	May 31, 2005	Submitted to EPA and DTSC.
Progress Report - March/April 2005	June 14, 2005	Submitted to EPA and DTSC. This is the first monthly progress report submitted. Review and comment pending.
Letter requesting an extension for QA/QC Plan Submittal	June 15, 2005	Currently negotiating the terms of the extension with EPA. QA/QC Plan due date suspended during this time.
Health and Safety Plan	June 17, 2005	Submitted to EPA and DTSC.
Operations and Maintenance Plan	June 17, 2005	Submitted to EPA and DTSC.
Time Line and Schedule	June 21, 2005	Submitted to EPA and DTSC.
Staffing Plan	June 21, 2005	Submitted to EPA and DTSC.
Progress Report - May 2005	June 30, 2005	Submitted to EPA and DTSC.
North Plant Target Extraction Rate Notification	July 25, 2005	Submitted to EPA and DTSC.
Progress Report - June 2005	July 31, 2005	Submitted to EPA and DTSC
Progress Report - July 2005	August 31, 2005	Submitted to EPA and DTSC
Letter requesting an extension for Baseline Mitigation Plan Submittal	September 22, 2005	Submitted to EPA and DTSC
Progress Report - August 2005	September 30, 2005	Submitted to EPA and DTSC
Letter requesting an extension for the OSAP and the QA/QC Plan	October 5, 2005	Submitted to EPA and DTSC
Progress Report - September 2005	October 31, 2005	Submitted to EPA and DTSC

**Table 6-3
Summary of Newmark Groundwater Flow Model Construction Activities
October 2005**

Modeling Component	Progress Summary
Activities Conducted During The Reporting Period	
Data Compilation	1) Continued to add monthly pumping data to database
Conceptual Model Development	1) Documented conceptual model approach, process and results 2) Extended the conceptual model basin -wide (with Geosciences and Numeric Solutions) 3) Met with Wes Danskin to refine conceptual approach
Model Construction	1) Continued to methodically refine model as follows: a) creation of refined stream flow routing package b) refined time steps required for model conversion c) subdivide model into 5 layer uniform properties d) prepared data sets for conversion to refined stress periods 2) Began preparation of presentation for model construction TAC meeting
Meetings	Met with workshop group on October 25th to discuss advances in model construction and conceptual model
Activities Planned/Conducted in November and December	
Data Compilation	1) Continue to catalogue data received to date
Conceptual Model Development	1) Continue to document conceptual model approach, process and results 2) Complete the conceptual model basin -wide (with Geosciences)
Model Construction	Continue to methodically refine model as follows: a) refinement to five-layer model b) incorporation of hydrostratigraphy detailed in the conceptual model b) <u>refine time steps</u>
Model Calibration	1) Complete draft Calibration Plan and present for comments to the TAC 2) Initiate execution of the Calibration Plan
Meetings	1) Working Group Meeting tentatively scheduled for second half of November 2) TAC meeting tentatively scheduled for first half of December

Note:

The Newmark Groundwater Flow Model is being co-developed with the Regional Basin Flow Model. As such, the City of San Bernardino Water Department's consultant (SECOR) is working jointly with San Bernardino Valley Municipal Water District's consultant (GEOSCIENCE Support Services) to fulfill both parties modeling objectives. This table provides a summary of the activities performed and activities planned in support of this joint venture.