TABLE 5-1
Data Quality Objectives for Area 3 Contamination Migration Conceptual Site Model (Remedial Investigation Subtask 3)
Remedial Investigation
San Gabriel Valley Area 3 Superfund Site

Step 1 – Define Basis of Evaluation

Overall Goal	Justification
Develop a groundwater contamination migration conceptual site model for Area 3, which includes assessments of: – Key COPCs: the COPCs present at concentrations that exceed the evaluation criteria in production wells multiple times. – Horizontal and vertical extent of groundwater contamination. – Contaminant fate. – Contamination migration pathways. The contamination migration conceptual site model integrates the hydrogeologic conceptual site model (RI Subtask 1) and the data on potential contaminant sources (RI Subtask 2). Tables 3-1 and 4-1 present the DQOs for RI Subtasks 1 and 2, respectively.	A contamination conceptual site model will help to facilitate identification of appropriate potential remedial actions in a future feasibility study for Area 3.

Step 2 – Identify Potential Evaluation Results

Potential Result	Consequences of Incorrect Results	Basis for Potential Incorrect Result	Methods for Avoiding an Incorrect Result
An accurate and adequate contamination migration conceptual site model.	An inadequate contamination conceptual site model may adversely impact the implementation of the feasibility study.	– Use of unreliable or inadequate data for critical decision making. – Inaccurate or inadequate hydrogeologic conceptual site model (RI Subtask 1). – Inaccurate or inadequate contaminant source identification (RI Subtask 2).	Ensure sufficient confidence in data used in decision making. Identify and quantify (as feasible) limitations of hydrogeologic conceptual site model and source investigation data. Complete Step 7 (Optimize the Design).
Additional data collection necessary to adequately develop the contamination migration conceptual site model for Area 3.	Collecting unnecessary data may waste resources.	Use of unreliable data for critical decision making.	Ensure sufficient confidence in data used in decision making. Ensure sufficiency of evaluations performed to identify critical data gaps.

COPC – contaminant of potential concern
DQOs – data quality objectives
EPA – United States Environmental Protection Agency
MCL – maximum contaminant level
NL – notification level
QAPP – quality assurance project plan
RI – remedial investigation
Watermaster – Main San Gabriel Basin Watermaster

Subtask 1 – Hydrogeologic Conceptual Site Model
Subtask 2 – Contaminant Source Identification
Subtask 3 – Contamination Migration Conceptual Site Model
Subtask 4 – Human Health Risk Assessment
Subtask 5 – Ecological Risk Assessment
Subtask 6 – Assessment of Next Steps

Step 3 – Define Evaluation Boundaries

Boundaries for Consideration	Justification for Consideration
See Step 3 in Table 3-1 for information on the geographic boundaries of Area 3.	See Step 3 in Table 3-1.
See Step 3 in Table 3-1 for information on the geographic boundaries of areas adjacent to Area 3.	See Step 3 in Table 3-1.
See Step 3 in Table 3-1 for information on the boundaries of aquifers in Area 3.	See Step 3 in Table 3-1.
See Step 3 in Table 3-1 for information on the boundaries of aquifers in areas adjacent to Area 3.	See Step 3 in Table 3-1.
Temporal Limitations: – Current contamination migration pathways.	See Step 3 in Table 3-1.

Step 4 – Identify Areas Outside of the RI Evaluation Boundaries

Excluded Areas	Justification for Exclusion
See Step 4 in Table 3-1 for information on the geographic boundaries of areas adjacent to Area 3.	See Step 4 in Table 3-1.
See Step 4 in Table 3-1 for information on the boundaries of aquifers in Area 3.	See Step 4 in Table 3-1.
See Step 4 in Table 3-1 for information on the boundaries of aquifers in areas adjacent to Area 3.	See Step 4 in Table 3-1.
Nitrate contamination.	Nitrate contamination is released by extensive non-point sources throughout the San Gabriel Basin, as opposed contamination from the other Key COPCs, which likely is released by discrete sources within Area 3. Subtask 4 identifies nitrate as contributing to the potential noncancer risks in Area 3. Therefore, further consideration of nitrate contamination will occur as part of the feasibility study as EPA evaluates the potential remedial actions for Area 3.
Contamination in vadose zone.	Contamination in the vadose zone is considered in the source identification process conducted by the State of California. Future remedial action will focus on addressing groundwater contamination.
Temporal Limitations: – Potential contaminant migration pathways.	Potential contamination migration pathways in Area 3 qualitatively evaluated. Groundwater flow modeling will quantitatively evaluate the contamination migration pathways as part of the feasibility study.

COPC – contaminant of potential concern
DQOs – data quality objectives
EPA – United States Environmental Protection Agency
MCL – maximum contaminant level
NL – notification level
QAPP – quality assurance project plan
RI – remedial investigation
Watermaster – Main San Gabriel Basin Watermaster

Subtask 1 – Hydrogeologic Conceptual Site Model
Subtask 2 – Contaminant Source Identification
Subtask 3 – Contamination Migration Conceptual Site Model
Subtask 4 – Human Health Risk Assessment
Subtask 5 – Ecological Risk Assessment
Subtask 6 – Assessment of Next Steps

TABLE 5-1
Data Quality Objectives for Area 3 Contamination Migration Conceptual Site Model (Remedial Investigation Subtask 3)
Remedial Investigation
San Gabriel Valley Area 3 Superfund Site

Step 5 – Identify Data Needs and Uses

Data Need	Data Use(s)	RI Report Reference(s)
Groundwater environmental data collected at production wells.	– Develop a preliminary assessment of the horizontal extent of Key COPC contamination in groundwater. – Develop a preliminary assessment of the vertical extent of Key COPC contamination in groundwater.	Section 4.2. Figures 4-1 through 4-7. Tables 4-8 and E-1. Section 5.2.
Groundwater environmental data collected at EPA monitoring wells.	– Identify locations of potential contaminant sources. – Assess the horizontal distribution of contamination for Key COPCs. – Assess the vertical distribution of contamination for Key COPCs.	Section 4.2. Figures 4-1 through 4-7. Tables 4-8 and E-1. Section 5.2.
Groundwater environmental data collected at facility monitoring wells.	– Identify locations of potential contaminant sources. – Assess the horizontal distribution of contamination for Key COPCs.	Section 4.2. Figures 4-1 through 4-7. Tables 4-8 and E-1. Section 5.2.
Hydrogeologic Conceptual Site Model (RI Subtask 1).	– Groundwater flow directions. – Recharge data. – Lithologic data. – Groundwater production data. – Hydraulic conductivity data.	Section 3.1.5.2. Section 3.1.6.3.
Contaminant Source Identification (RI Subtask 2).	– Key COPCs – Assess historic and current contaminant migration pathways.	Sections 4.4 and 5.2.1 through 5.2.5

COPC – contaminant of potential concern
DQOs – data quality objectives
EPA – United States Environmental Protection Agency
MCL – maximum contaminant level
NL – notification level
QAPP – quality assurance project plan
RI – remedial investigation
Watermaster – Main San Gabriel Basin Watermaster

Subtask 1 – Hydrogeologic Conceptual Site Model
Subtask 2 – Contaminant Source Identification
Subtask 3 – Contamination Migration Conceptual Site Model
Subtask 4 – Human Health Risk Assessment
Subtask 5 – Ecological Risk Assessment
Subtask 6 – Assessment of Next Steps

TABLE 5-1
Data Quality Objectives for Area 3 Contamination Migration Conceptual Site Model (Remedial Investigation Subtask 3)
Remedial Investigation
San Gabriel Valley Area 3 Superfund Site

Step 6 – Evaluate Data Usability

Data Type	Data Generation and Reliability	Assessment Performed
Groundwater environmental data collected at production wells.	– Published Watermaster data of known and usable quality. – Data Quality and Usability Assessment indicates data are of sufficient quality for use in the Area 3 RI.	Appendix C presents results of the Data Quality and Usability Assessment conducted by EPA.
Groundwater environmental data collected at EPA monitoring wells.	– Data collected by EPA. – Data Quality and Usability Assessment indicates data are of sufficient quality for use in the Area 3 RI. – Data set achieved the 90% completeness goal identified in the Area 3 QAPP (EPA, 2003a).	Appendix C presents results of the Data Quality and Usability Assessment conducted by EPA.
Groundwater environmental data collected at facility monitoring wells.	– Data obtained from the State. – Data Quality and Usability Assessment indicates data are of sufficient quality for use in the Area 3 RI.	Appendix C presents results of the Data Quality and Usability Assessment conducted by EPA.
Hydrogeologic Conceptual Site Model (RI Subtask 1).	– See Step 6 on Table 3-1 for information on data generation and reliability.	See Step 6 on Table 3-1.
Contaminant Source Identification (RI Subtask 2).	– See Step 6 on Table 4-1 for information on data generation and reliability.	See Step 6 on Table 4-1.

Step 7 – Optimize the Design

Actions	Methods for Optimizing the Design
Complete feasibility study as part of next steps assessment	Use contamination migration conceptual site model as basis for feasibility study. See Table 8-1.

COPC – contaminant of potential concern
DQOs – data quality objectives
EPA – United States Environmental Protection Agency
MCL – maximum contaminant level
NL – notification level
QAPP – quality assurance project plan
RI – remedial investigation
Watermaster – Main San Gabriel Basin Watermaster

Subtask 1 – Hydrogeologic Conceptual Site Model
Subtask 2 – Contaminant Source Identification
Subtask 3 – Contamination Migration Conceptual Site Model
Subtask 4 – Human Health Risk Assessment
Subtask 5 – Ecological Risk Assessment
Subtask 6 – Assessment of Next Steps