

**Revision 4 - Fall, 2005 Phase II RI Sampling Soil Vapor, Surface Drainage Water, and
Background Soil**

November 18, 2005

CASMALIA SITE REMEDIATION PROJECT

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November 18, 2005

To: Russell Mechem – EPA
Lynda Deschambault – EPA

Subject: Revision 4 - Fall, 2005 Phase II RI Sampling
Soil Vapor, Surface Drainage Water, and Background Soil

As requested by EPA in their November 17, 2005 email, the Casmalia Steering Committee (CSC) has revised an earlier October 24, 2005 memorandum summarizing the Phase II RI Soil Vapor, Surface Water, and Background Soil sampling.

This revised memorandum discusses the Phase II RI sampling that was requested by EPA in their September 26, 2005 comments on the Interim Progress Report (IPR) and the additional Background Soil sampling CSC expects to complete this Fall, 2005. The memorandum is formatted to include the same information that we had provided EPA in the revised Final RI/FS Work Plan (dated June 3, 2004) that described the previous Phase I soil vapor, surface drainage water, and background soil sampling. The memorandum summarizes the sampling program, sampling locations, expected analytical program for all samples, and refers back to the applicable SOPs, SAP, and QAPP of the revised Final RI/FS Work Plan.

The memorandum does not include the Geophysical Survey work that the CSC is currently performing at the site as the details of this work was previously documented in the Final Geophysical Survey Plan (dated September 6, 2005). EPA previously approved the details of that work which was completed in October. The memorandum also does not include the additional MNA or ground water analytes that EPA requested in their September 26, 2005 comments on the IPR. The CSC has discussed that sampling with EPA and has summarized that sampling via a separate memorandum submitted to EPA.

The schedule for the Fall sampling work discussed in this memorandum is listed below:

- Soil vapor work was completed from November 11 through November 15, 2005.
- Surface water sampling will occur according to available rain fall.
- Background soil sampling is scheduled to begin November 28, 2005 and take less than one week.

Soil Vapor Samples

The CSC will collect soil vapor samples at sixteen locations that were requested by EPA in their IPR comments which include three locations to the east of the Liquids Treatment Area, three step out locations on the north and east boundary of the site which are approximately 75 to 100 feet

outside three previous Phase I soil vapor probes, two locations along the western boundary of the Burial trench Area, and five locations in the Central Drainage Area. EPA had also requested that the CSC sample three deeper probes on the north and east boundary of the site at the same locations as three previous Phase I probes. The CSC noted in a letter dated October 7, 2005 sent to EPA that we wanted to discuss these three locations further with EPA. We have subsequently agreed to include in the proposed sampling. The locations of all sixteen soil vapor sample locations are shown on Figure 4.1-P2 attached to this memorandum. The figures shows two possible locations for RISVCL-08C. As agreed with EPA in the field, we will sample the location which is approximately 75 feet away from the previous RISVCL-08 location.

The soil vapor data will be used to complement existing data to address the potential vapor migration from areas of the site where wastes may be present and may be used in the HHRA and ERA to evaluate potential exposures to chemicals in soil gas.

The sampling locations shown on Figure 4.1-P2 were selected to incorporate EPA's September 26, 2005 comments on the IPR (specifically Section III-Appendix C-Comment #1-#4 of the letter). The CSC and representatives for EPA walked the proposed locations in the field on October 10, 2005 to agree on these final locations.

The soil vapor samples will be collected using temporary driven probes which will be advanced to a depth of 7.5 feet (the midpoint of the depth range of 5 to 10 feet) using a direct-push probe for all but the three "deep" probe locations. The "deep" soil vapor locations will also be collected using temporary driven probes which will be advanced to a depth of approximately 20 feet using a direct-push probe (or if the probe cannot penetrate to that depth as deep as possible). Soil vapor samples will be collected as detailed in SOP 1-9 of the June 3, 2004 revised Final RI/FS Work Plan which uses the guidelines from the advisory on active soil gas investigations prepared by the DTSC and Los Angeles RWQCB (DTSC and LARWQCB, January 2003). The sample will be collected in SUMMA canisters provided by a certified laboratory and will be analyzed for VOCs using USEPA Method TO-15. The Phase II soil vapor work will adhere to the same laboratory requirements for analytical work for this type of sampling as was required by the June 3, 2004 revised Final RI/FS Work Plan (this can be found in Appendix B QAPP of the Work Plan).

The CSC has summarized the soil vapor sampling in Table 4.4-P2 attached to this memorandum. The table does not yet include the survey coordinates for all of the soil vapor locations as they were just recently selected. The CSC will survey the locations and provide all of those coordinates as part of our final reporting of the data. Additional details on soil vapor sampling can also be found in Section A6.5.10 of the SAP (Appendix A) of the June 3, 2005 revised Final RI/FS Work Plan.

Surface Water Samples

The CSC will collect surface water samples at three locations to supplement existing data. The three locations include two previous or Phase I RI surface water locations (one in the RCRA Canyon or RISWRC-01 and one in the North drainage or RISWOF-02), and a new location further north in the North drainage. The surface water sample locations are shown on Figure 4.1-P2 attached to this memorandum.

Surface water samples will be collected at two time intervals in the North and RCRA Canyon Drainages. The sampling will be conducted during the initial rainy season (October/November) and during the height of the rainy season (March/April), if possible. If the drainages are continuing to run during the summer months they will be sampled at that time also. Note however, that historically these locations have not had any running water to sample in the summer. Surface water samples will be analyzed for full Appendix IX analyses.

The sampling locations as shown on Figure 4.1-P2 were chosen after the CSC and representatives for EPA walked the locations in the field on October 10, 2005. Samples will be collected using SOP 3-4 of the June 3, 2005 revised Final RI/FS Work Plan by submerging laboratory provided containers just under the surface of the water until the container is full. The Phase II surface water sampling will adhere to the same laboratory requirements for analytical work as was required by the June 3, 2004 revised Final RI/FS Work Plan for this type of sampling (this can be found in Appendix B QAPP of the Work Plan).

The CSC has summarized the planned surface water sampling in Table 4.4-P2 attached to this memorandum. The table does not yet include survey coordinates for the new north drainage locations as it were just recently selected. The CSC will survey the location and provide all of those coordinates as part of our final reporting of the data. Additional details on surface water sampling can also be found in Section A6.5.11 of the SAP (Appendix A) of the June 3, 2005 revised Final RI/FS Work Plan.

Background Soil Samples

The CSC will collect background soil samples at additional depths at the same ten previous offsite soil locations that we had collected Phase I background soil samples to supplement existing data (locations RISSBK-13 through 22). The background soil sample locations are shown on Figure 4.1-P2 attached to this memorandum.

The CSC has elected to gather additional background soil samples to augment the Phase I RI background soil samples we had collected earlier. We are specifically looking to add information to the database regarding herbicides for surface background soils (which were not included in the original sampling suites) and to gather additional background soil inorganic constituent data at different depths so we may evaluate whether different depths have statistically significant variations in inorganic constituents.

The sampling locations as shown on Figure 4.1-P2 were chosen prior to Phase I RI activities after the CSC and representatives for EPA walked the locations in the field. Samples will be collected using SOP 1-1 of the June 3, 2005 revised Final RI/FS Work Plan. The Phase II background soils sampled at depths below the surface soil will be analyzed for metals (EPA Method 200.8, 6010B, 6020, and the 7000 series) and will adhere to the same laboratory requirements for this analytical work as was required by the June 3, 2004 revised Final RI/FS Work Plan for this type of sampling (this can be found in Appendix B QAPP of the Work Plan). The surface background soil samples will be analyzed for chlorinated herbicides (EPA Method 8151A) and will also adhere to the same laboratory requirements for this analytical work as was required by the June 3, 2004 revised Final RI/FS Work Plan for this type of sampling (this can be found in Appendix B QAPP of the Work Plan). The background soil samples will be sent to Sequoia Laboratory (Morgan Hill). Phase I soil samples were also analyzed at Sequoia Lab but at their Petaluma location. That lab location has since been converted to a distribution and administration center and the lab functions and equipment transferred to Morgan Hill. The Morgan Hill facility will adhere to all of the same laboratory MDL and QA/QC requirements that the Petaluma facility met.

The CSC has summarized the planned background soil sampling in Table 4.4-P2 attached to this memorandum. Additional details on background soil sampling can also be found in Section A6.5.2 of the SAP (Appendix A) of the June 3, 2005 revised Final RI/FS Work Plan.

Documentation

The CSC will document the Phase II RI data using the same procedures and requirements as were required by the June 3, 2004 revised Final RI/FS Work Plan. The project documentation requirements are specifically discussed in Section 11.2 of the June RI/FS Work Plan. The data from this sampling will be included in the electronic database and copies of that will be provided to EPA.

In the case of the soil vapor sampling at the three step out locations, the CSC will make every effort to provide the results of that sampling to EPA within 4 weeks (as was requested in EPA's September 26th letter). The critical path for being able to meet that request will be the VOC analysis of the summa canisters collected as part of the soil vapor sampling.

Field Supervision and Coordination with EPA

The CSC expects that the soil vapor work will be performed by GeoSyntec (using the same staff as we used to complete the previous soil vapor sampling). As required, the CSC's Project Coordinator will provide supervision of GeoSyntec while they are in the field. The CSC expects to collect the surface water samples using current URS site staff (who collected the previous Phase I surface water samples). The CSC expects to collect background soil samples with URS (using the same staff as we had used for the Phase I soil sampling).

In all cases we will notify EPA's on site representative of our plans to conduct the sampling at least 48 hours in advance of beginning the work. In the case of the surface water sampling, since this obviously depends on rain, we may not be able to provide that 48 hours notice. The CSC will coordinate any field work with EPA using the same guidelines that are discussed in Section 11 of the June RI/FS Work Plan which we had established for the Phase I RI work. That coordination specifically includes the requirements to coordinate with EPA as discussed in Section 11.3 of the Work Plan (and in Section A6.1 of the Sampling Analysis Plan or Appendix A of the Work Plan) and to hold daily status meetings as discussed in Section 11.5 of the Work Plan. In addition, the CSC will continue to use the management of change procedures that we had agreed with EPA prior to beginning the Phase I RI work (please see Section 11.7 of the Work Plan). Any change in sampling procedures or analytical reporting that were documented in an approved RICH form for Phase I RI sampling will also apply to the Phase II RI sampling.

regards,

Corey Bertelsen
Casmalia Project Coordinator

Attachments

Table 4.4-P2
Figure 4.1-P2
Table A.2-P2

cc Jim Dragna – BM
Dave Roberson - ExxonMobil
Paul Taylor - ConocoPhillips
Dan Niles – RWQCB
Caroline Rudolph – DTSC
Mark Wuttig – CH2MHill

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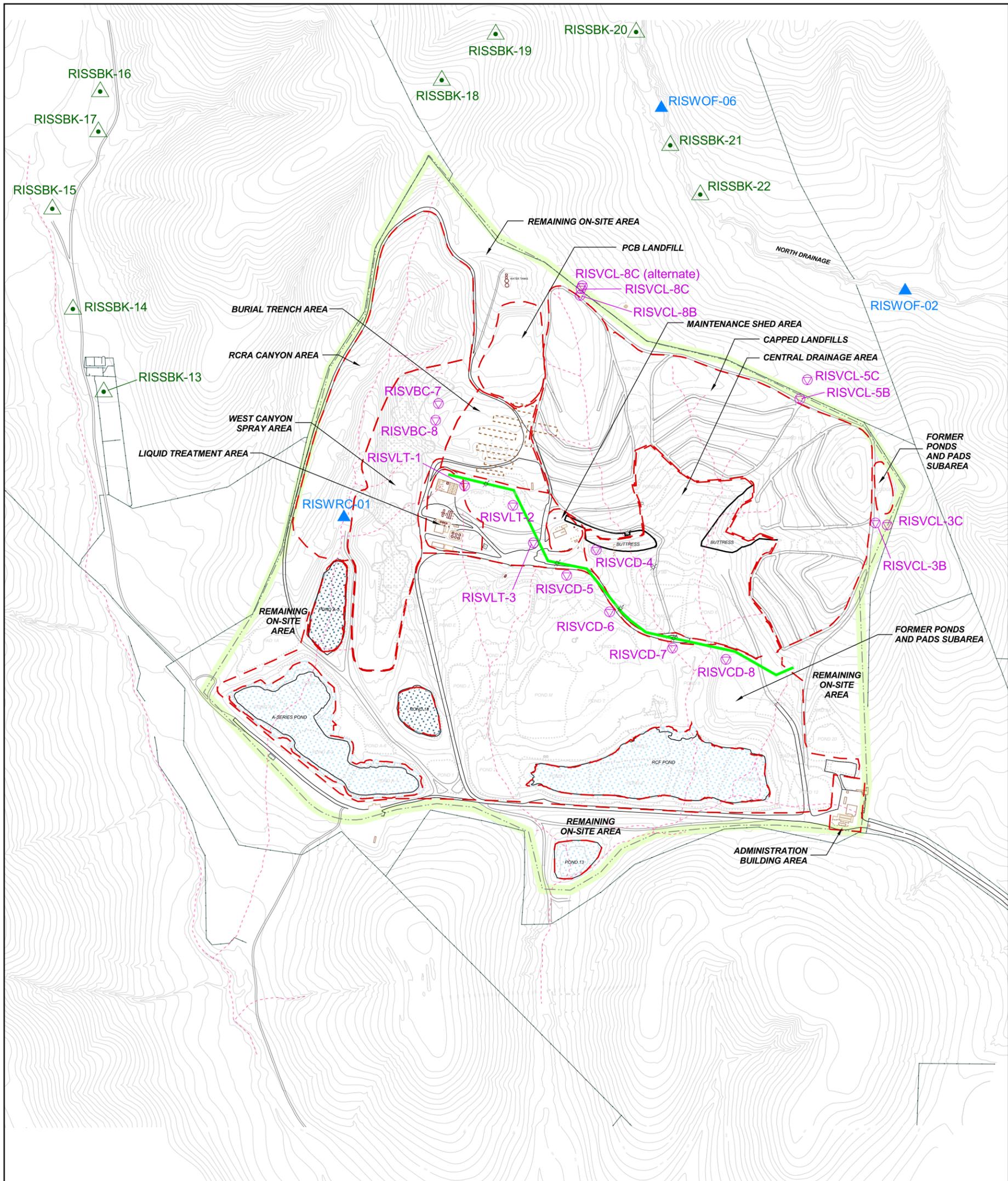
Table 4-4-P2 Soil Vapor, Surface Water, and Background Soil Sampling Program Summary (rev 10.24.05)

Area	Approximate # Samples			Approx. Boring Depth	Default Sample Depths	Metals										Pest/PCB	Herb	TPH g.d. AppX IX*	Mod Furans(2)	Dioxin/	Physical Properties (3)	General Minerals/EDB/DBCP			
	# Loc's	# per Loc'n	Total			Type	GS Elev	Water Elev	DTW	DTC	VOC	SVOC	PCB	As	Cd								Cu	Cr	Pb
Capped Landfills Area																									
Soil Vapor Sampling																									
Sample ID	3	1	3	1	20	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample ID	505989	Easting	Type	GS Elev	Water Elev																				
RISVCL-3B	12387766	TYPE1	667	600																					
RISVCL-5B	507733	12383315	TYPE1	648	600																				
RISVCL-6B	507352	1237003	TYPE1	725	660																				
RISVCL-8B	3	1	3	1	7.5																				
RISVCL-3C	TBD	TBD	TYPE1																						
RISVCL-5C	TBD	TBD	TYPE1																						
RISVCL-8C	TBD	TBD	TYPE1																						
RCRA Canyon Area																									
Surface Water																									
Sample ID	1	1	1	9	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample ID	507998	Easting	Type	GS Elev	Water Elev	Contact Elevation	DTW	DTC																	
RISWRC-1	12355556	TYPE9	465	478	460	-13	5																		
Central Drainage Area																									
Soil Vapor Sampling																									
Sample ID	5	1	5	1	7.5	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample ID		Easting	Type	GS Elev	Water Elev																				
RISVCD-4	TBD	TBD	TYPE1																						
RISVCD-5	TBD	TBD	TYPE1																						
RISVCD-6	TBD	TBD	TYPE1																						
RISVCD-7	TBD	TBD	TYPE1																						
RISVCD-8	TBD	TBD	TYPE1																						
Burial Trench Area																									
Soil Vapor Sampling																									
Sample ID	2	1	2	1	7.5	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample ID		Easting	Type	GS Elev	Water Elev																				
RISVBC-7	TBD	TBD	TYPE1																						
RISVBC-8	TBD	TBD	TYPE1																						
Liquids Treatment Area																									
Soil Vapor Sampling																									
Sample ID	3	1	3	1	7.5	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample ID		Easting	Type	GS Elev	Water Elev																				
RISVLT-1	TBD	TBD	TYPE1																						
RISVLT-2	TBD	TBD	TYPE1																						
RISVLT-3	TBD	TBD	TYPE1																						
Offsite Area																									
Surface Water																									
Sample ID	2	1	2	9	Surface	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample ID		Easting	Type	GS Elev	Water Elev	Contact Elevation	DTW	DTC																	
RISWOF-2	507384	1238927	TYPE9	470	462	458	8	12																	
RISWOF-6	TBD	TBD	TYPE9																						
Background Soils (1)																									
Sample ID	10	3	30	5	20	0.5-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample ID		Easting	Type	GS Elev	Water Elev	Contact Elevation	DTW	DTC																	
RISSEBK-13	506788	1234151	TYPE2	473	0	448	473	25																	
RISSEBK-14	507283	1234010	TYPE2	465	0	455	485	30																	
RISSEBK-15	507882	1233944	TYPE2	495	0	467	495	28																	
RISSEBK-16	508585	1234129	TYPE2	523	0	490	523	33																	
RISSEBK-17	508345	1234119	TYPE2	695	0	703	695	-8																	
RISSEBK-18	508653	1236170	TYPE2	842	660	742	182	100																	
RISSEBK-19	508929	1236491	TYPE2	775	620	675	155	100																	
RISSEBK-20	508941	1237331	TYPE2	570	555	550	15	20																	
RISSEBK-21	508263	1237535	TYPE2	565	535	527	30	38																	
RISSEBK-22	507968	1237713	TYPE2	538	525	502	13	36																	

Sample Depth / Sample Collection Notes:

- Anticipated drilling methods -
- Type 1 Samples: Direct Push Rig
- Type 2 Samples: Manual Sampling Tools
- Type 3, 4, 5, 6 Samples: Direct Push Rig (default) or Hollow Stem Auger Rig (if necessary)
- Type 7 Borings: CPT Rig

(1) Maximum Background Sampling Depth to 20 feet if needed to obtain claystone sample
Surface samples analyzed only for herbicides



Explanation

Proposed Phase II Sample Locations

- ▲ Surface Water (Type 9)
- ⊕ Soil Vapor (Type 1)
- ▲ Background Soil

Other Site Features

- Casmalia Site Boundary
- - - Study Area Boundary
- ⊗ Liquids Extraction Well
- Perimeter Source Control Trench (PSCT)
- Fence
- - - Historical Natural Drainage (Based on 1956 Photo, 1974 and 1974 Topographic Maps, and Figures 21-2 and 21-3 Woodward-Clyde, 1988)

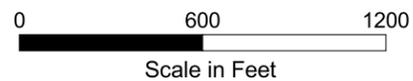


Figure 4.1-P2

Proposed Phase II Soil Vapor, Surface Water and Background Soil Sample Locations

Phase II Fall Sampling Program
 Casmalia Site Remedial Investigation
 October 2005

