SUBAREA 5C ADDENDUM
TO
FIELD SAMPLING PLAN
FOR
SOIL SAMPLING
AREA IV RADIOLOGICAL STUDY
SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA

Prepared for:

U.S. Environmental Protection Agency Region 9
75 Hawthorne Street
San Francisco, California 94105

U.S. EPA Contract Number: EP-S7-05-05
Task Order Number: 0038

October 6, 2010

HydroGeoLogic, Inc

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1.0 INTRODUCTION

HydroGeoLogic, Inc. (HGL) has been tasked by the U. S. Environmental Protection Agency (USEPA) to conduct a radiological characterization study of the Santa Susana Field Laboratory (SSFL) at Area IV and the Northern Buffer Zone located in Ventura County, California. This work is being executed under USEPA Region 7 Architect and Engineering Services Contract EP-S7-05-05, Task Order 0038. The technical lead on the project is USEPA Region 9.

This document supports the field implementation of the overall soil sampling program and is an addendum to the master Field Sampling Plan for Soil Sampling (HGL, 2010a). A description of the overall project goals; data quality objectives; sampling strategy; laboratory analytical suites; sample depth interval selection; data quality control; and data evaluation are described in the master document (HGL, 2010a).

It should be noted that at the time of this writing, approximately five percent of the accessible areas in Subarea 5C have not yet been surveyed pursuant to the Final Gamma Radiation Scanning Sampling and Analysis Plan (HGL, 2010b). Upon implementation of the remaining survey work, additional Round 1 samples may be required and taken to address potential additional gamma radiation anomalies.

2.0 PURPOSE

The purpose of this addendum is to document the rationale for determining the location and depth of soil samples to be collected during the first phase of soil sampling within Subarea 5C (i.e., Round 1). This addendum also documents the laboratory analyses that will be performed for each soil sample, drawing upon a default suite list from Table 2.4 of the Field Sampling Plan and adding site-specific analytes to that list by location as appropriate.

Table 1 provides the location for each soil sample that will be collected in Subarea 5C during Round 1 of the soil sampling investigation as well as the technical justification and rationale for the selection of each sample location. Also summarized in this table is the suite of radiological analyses that will be performed on every sample, as well as other field-pertinent information including sample identification number and general proximity to radiological facilities.

Figure 1 provides a base map that shows the location of each subgroup within Subarea 5C. The location and type (e.g. surface, subsurface, drainage) of each sample within each of the six Subarea 5C groupings are shown in Figures 2 through 7.

Appendix A provides key technical information that led to the selection of sample locations, sample interval selection, and the laboratory analysis that will be performed for each sample collected. The key information includes results of geophysical surveys, gamma radiation surveys, results of past soil radiological investigations, and the findings summarized in the Historical Site Assessment Technical Memorandum for Subarea 5C (HGL, 2010c).

It should be noted that the specific sample location and analysis recommendations presented herein were discussed during a technical review meeting held on September 23, 2010, with members of USEPA's SSFL Technical Stakeholder group consisting of representatives of U.S. Department of Energy, the State of California Department of Toxic Substances Control, The Boeing Company, the USEPA, and the community.

3.0 SCHEDULE

The schedule below presents proposed start and completion dates of major tasks for the Round 1 soil sampling within Subarea 5C. USEPA will provide periodic updates to its SSFL Stakeholders regarding the status of the soil sampling program as well as the laboratory analysis and data interpretation.

Task	Start Date	Completion Date
Readiness Review	October 6, 2010	October 13, 2010
Start Round 1 Sampling	October 18, 2010	November 24, 2010

4.0 REFERENCES

HydroGeoLogic, Inc., 2010a. Field Sampling Plan for Soil Sampling, Area IV Radiological Study, Santa Susana Field Laboratory, Ventura County, California. October 04, 2010.

HydroGeoLogic, Inc., 2010b. Final Gamma Radiation Scanning Sampling and Analysis Plan Area IV Radiological Study, Santa Susana Field Laboratory, Ventura County, California. February, 2010.

HydroGeoLogic, Inc., 2010c. Revised Draft, Technical Memorandum, Subarea HSA-5C, Historical Site Assessment, Santa Susana Field Laboratory Area IV Radiological Study, Ventura County, California. August 2010.

TABLE

Table 1
Summary of Soil Sample Locations in Subarea 5C

Grouping	Sample Type	Location ID	Location Description	Technical Justification	Analytical Suite[1, 2, 3]	X_WGS84	Y_WGS84
Group 1	Surface	1	Northeast of Building 4059	Possible OS area; Underground contaminated gas suspect tank.	Default + SS	-118.7136373	34.2327034
Group 1	Subsurface	1	Northeast of Building 4059	Possible OS area; Underground contaminated gas suspect tank.	Default + SS	-118.7136373	34.2327034
Group 1	Surface	2	North of Building 4059	Possible OS; Verticle tank noted in airphoto; radiological waste/gasoline hold tank footprint.	Default + SS + C-14	-118.7137566	34.23262826
Group 1	Subsurface	2	North of Building 4059	Possible OS; Verticle tank noted in airphoto; radiological waste/gasoline hold tank footprint.	Default + SS	-118.7137566	34.23262826
Group 1	Subsurface	3	Northeast of Building 4059	Soil excavated during demolition of Building 4059 was used as backfill.	Default + SS	-118.7135649	34.23261452
Group 1	Surface	4	North-northwest of Building 4059	Soil excavated during D&D of Building 4059 was used as backfill; Proximity to Building 4059.	Default + SS + C-14	-118.7139031	34.23255704
Group 1	Subsurface	4	North-northwest of Building 4059	Soil excavated during D&D of Building 4059 was used as backfill; Proximity to Building 4059.	Default + SS	-118.7139031	34.23255704
Group 1	Subsurface	5	Northwest of Building 4059	Tank footprint of underground tank.	Default + SS	-118.7138569	34.23243916
Group 1	Subsurface	6	North side of Building 4059	Proximity to Building 4059 french drain; Two ASTs; soil excavated during Building 4059 D&D used as backfill..	Default + SS	-118.7137713	34.23247949
Group 1	Subsurface	7	North side of Building 4059	French drain; Two ASTs; Building 4059 excavated soil used as backfill, past soil data shows radiological concentration greater than the preliminary remediation goals.	Default + SS	-118.7136545	34.2325028
Group 1	Surface	8	Northwest of Building 4059	Elevated radionuclide concentrations measured in past soil verification samples.	Default + SS	-118.7138868	34.23234605
Group 1	Subsurface	8	Northwest of Building 4059	Elevated radionuclide concentrations measured in past soil verification samples.	Default + SS	-118.7138868	34.23234605
Group 1	Subsurface	9	North portion of Building 4059, inside footprint	Soil from Bldg 4059 D&D excavation used to backfill.	Default + SS	-118.7136237	34.23242353
Group 1	Subsurface	10	West side of former Building 4059; NE of the french drain holding tank	Location of former French drain and holding tank, Geophysical Anomaly.	Default + SS + C-14	-118.7137087	34.2322835
Group 1	Subsurface	11	West portion of Building 4059, inside footprint	Soil from excavation used to backfill, Geophysical Anomaly.	Default + SS	-118.713647	34.23231361
Group 1	Surface	12	South central portion of Building 4059, inside footprint	Soil excavated during D&D of Building 4059 was used as backfill.	Default + SS	-118.7135636	34.23237332
Group 1	Subsurface	12	South central portion of Building 4059, inside footprint	Soil from excavation used to backfill.	Default + SS	-118.7135636	34.23237332
Group 1	Subsurface	13	East side of Building 4059	Footprint of a former underground contaminated waste hold up tank, Geophysical Anomaly.	Default + SS + C-14	-118.7134185	34.23237885
Group 1	Subsurface	14	West of Building 4059	Soil from excavation used to backfill; Possible OS.	Default + SS	-118.7137055	34.23216182
Group 1	Subsurface	15	Southwest portion of Building 4059, inside footprint	Soil from excavation used to backfill, Geophysical Anomaly.	Default + SS + C-14	-118.7135875	34.23224193
Group 1	Subsurface	16	South central portion of Building 4059, inside footprint	Elevated radionuclide concentrations measured in past soil verification samples, Geophysical Anomaly.	Default + SS	-118.7134713	34.23228055
Group 1	Subsurface	17	Southeast corner of Building 4059 footprint	French drains; Soil excavated during Building 4059 D&D used as backfill, Geophysical Anomaly.	Default + SS	-118.7133339	34.23234402
Group 1	Surface	18	West portion of Group 1	Elevated radionuclide concentrations measured in past soil samples; Stained area; OS area; Possible pit.	Default + SS	-118.7138985	34.23200932
Group 1	Subsurface	18	West portion of Group 1	Elevated radionuclide concentrations measured in past soil samples; Stained area; OS area; Possible pit.	Default + SS	-118.7138985	34.23200932
Group 1	Subsurface	19	Southwest of Building 4059	Two former ASTs; Soil excavated during demolition of Building 4059 was used as backfill.	Default + SS	-118.7137041	34.23205943
Group 1	Surface	20	South of Building 4059	If storm drain received radiological material residual contamination may remain.	Default + SS	-118.7134192	34.23215395
Group 1	Subsurface	20	South of Building 4059	If storm drain received contaminated drainage, residual radiological contamination may remain.	Default + SS + C-14	-118.7134192	34.23215395
Group 1	Subsurface	21	South side of Building 4059	French drains; Soil excavated during demolition of Building 4059 was used as backfill.	Default + SS	-118.7135323	34.23218355
Group 1	Subsurface	22	Southeast corner of Building 4059 footprint	French drains; Soil excavated during Building 4059 D&D was used as backfill, Geophysical Anomaly.	Default + SS	-118.7133452	34.2322669
Group 1	Storm Drain	23	Southeast corner of Building former 4059	If radioactive material was released, storm drain may have received surface water runoff.	Default + SS	-118.7130908	34.23232819
Group 1	Surface	24	West side of Group 1	OS area.	Default + SS	-118.7139453	34.23188641
Group 1	Subsurface	24	West side of Group 1	OS area.	Default + SS	-118.7139453	34.23188641
Group 1	Subsurface	25	West of Building 4059	Soil from excavation used to backfill; OS.	Default + SS	-118.7137792	34.23196103
Group 1	Surface	26	South of Building former 4059	Recommended sample around Building 4059 - HSA.	Default + SS + C-14	-118.7135769	34.23198018
Group 1	Subsurface	26	South of Building former 4059	Recommended sample around Building 4059 - HSA.	Default + SS	-118.7135769	34.23198018

Table 1
Summary of Soil Sample Locations in Subarea 5C

Grouping	Sample Type	Location ID	Location Description	Technical Justification	Analytical Suite[1, 2, 3]	X_WGS84	Y_WGS84
Group 1	Surface	27	South of Building 4059	Elevated radionuclide concentrations measured in past soil verification samples.	Default + SS	-118.71349	34.23204664
Group 1	Subsurface	27	South of Building 4059	Elevated radionuclide concentrations measured in past soil verification samples.	Default + SS	-118.71349	34.23204664
Group 1	Subsurface	28	West of Building former 4059	Soil from excavation used to backfill; Possible OS.	Default + SS	-118.7138343	34.23180741
Group 2	Storm Drain	29	East of former Building 4335	Storm drainage.	Default	-118.712671	34.23183816
Group 2	Subsurface	30	South of Building 4057	Location of dry well.	Default	-118.7129795	34.23179254
Group 2	Subsurface	31	South of Building 4057	South of drywall location.	Default	-118.7129755	34.23175424
Group 2	Surface	32	Footprint of Building 4626	Possible OS, chemical use area/debris field.	Default + SS	-118.7137122	34.23167886
Group 2	Subsurface	32	Footprint of Building 4626	Possible OS, chemical use area/debris field.	Default + SS	-118.7137122	34.23167886
Group 2	Surface	33	West of former Building 4626	On prior access road - interview line, Gamma anomaly.	Default	-118.7139374	34.23156276
Group 2	Subsurface	33	West of former Building 4626	On prior access road - interview line, Gamma anomaly.	Default	-118.7139374	34.23156276
Group 2	Storm Drain	34	North of former Building 4062	Storm drainage.	Default	-118.7123209	34.23150954
Group 2	Storm Drain	35	North of former Building 4062	Inside storm drain container.	Default	-118.712401	34.2314298
Group 2	Surface	36	West of Building 4038	OS, containers.	Default	-118.7134258	34.23134755
Group 2	Subsurface	36	West of Building 4038	OS, containers.	Default	-118.7134258	34.23134755
Group 2	Subsurface	37	Northwest of former Building 4062	Near Underground tank.	Default	-118.7126258	34.23131711
Group 2	Surface	38	Northwest of Building 4463	Debris field.	Default + C-14	-118.7142654	34.2311146
Group 2	Subsurface	38	Northwest of Building 4463	Debris field.	Default	-118.7142654	34.2311146
Group 2	Surface	39	Southwest of Building 4038	Probable vertical tank, probable stain, OS, containers.	Default	-118.7133395	34.23117856
Group 2	Subsurface	39	Southwest of Building 4038	Probable vertical tank, probable stain, OS, containers.	Default	-118.7133395	34.23117856
Group 2	Subsurface	40	In parking lot between Building 4038 and former Building 4065	Unknown.	Default	-118.7130145	34.23118798
Group 2	Surface	41	Footprint of Building 4062	Possible vertical tank, ground scar.	Default	-118.7124442	34.23112533
Group 2	Subsurface	41	Footprint of Building 4062	Possible vertical tank, ground scar.	Default	-118.7124442	34.23112533
Group 2	Subsurface	42	Northwest of Building 4463	Geophysical anomaly.	Default	-118.7143424	34.23078811
Group 2	Surface	43	West of former Building 4065	OS area.	Default + C-14	-118.7133373	34.23092807
Group 2	Subsurface	43	West of former Building 4065	OS area.	Default	-118.7133373	34.23092807
Group 2	Subsurface	44	East of former Building 4065	Unidentified tank.	Default	-118.7128349	34.2309842
Group 2	Surface	45	East of former Building 4065	Ground scar.	Default	-118.7128621	34.23090087
Group 2	Subsurface	45	East of former Building 4065	Ground scar.	Default	-118.7128621	34.23090087
Group 2	Subsurface	46	South of former Building 4065	Ground scar, former metals clarifier.	Default	-118.7129051	34.23079902
Group 2	Surface	47	Footprint of Building 4066	Ground scar.	Default	-118.7123145	34.23091257
Group 2	Subsurface	47	Footprint of Building 4066	Ground scar.	Default	-118.7123145	34.23091257
Group 2	Storm Drain	48	Southeast of Building 4066	Storm drain container.	Default	-118.7119631	34.23084629
Group 3	Surface	49	North section of open area between 22nd and 23rd street	OS area.	Default	-118.7142324	34.23063929
Group 3	Subsurface	49	North section of open area between 22nd and 23rd street	OS area.	Default	-118.7142324	34.23063929
Group 3	Surface	50	Northeast of Building 4100	Disturbed ground, chemical use area/debris field.	Default	-118.7146446	34.23047936
Group 3	Subsurface	50	Northeast of Building 4100	Disturbed ground, chemical use area/debris field.	Default	-118.7146446	34.23047936
Group 3	Surface	51	North section of open area between 22nd and 23rd street	OS area, crates.	Default	-118.714299	34.23051981
Group 3	Subsurface	51	North section of open area between 22nd and 23rd street	OS area, crates.	Default	-118.714299	34.23051981
Group 3	Surface	52	Area between 23rd street and 24th street	Geophysical anomaly, crates, OS area, previous remedial excavation area.	Default	-118.7142188	34.23052537
Group 3	Subsurface	52	Area between 23rd street and 24th street	Geophysical anomaly, crates, OS area, previous remedial excavation area.	Default	-118.7142188	34.23052537
Group 3	Surface	53	East of Building 4100	Ground scar, OS area, MTMM, chemical use area/debris field.	Default + C-14	-118.7145935	34.23035954
Group 3	Subsurface	53	East of Building 4100	Ground scar, OS area, MMTM, chemical use area/debris field.	Default	-118.7145935	34.23035954

Table 1
Summary of Soil Sample Locations in Subarea 5C

Grouping	Sample Type	Location ID	Location Description	Technical Justification	Analytical Suite[1, 2, 3]	X_WGS84	Y_WGS84
Group 3	Surface	54	Open area between 22nd and 23rd street	OS area, possible debris field, WDA, previous remedial excavation area.	Default	-118.714242	34.23037277
Group 3	Subsurface	54	Open area between 22nd and 23rd street	OS area, possible debris field, WDA, previous remedial excavation area.	Default	-118.714242	34.23037277
Group 3	Subsurface	55	Along 23rd street, south of F street	Gamma anomaly.	Default	-118.7140386	34.23042241
Group 3	Surface	56	North of Building 4100	Recommended in HSA document.	Default	-118.7154847	34.2303079
Group 3	Subsurface	56	North of Building 4100	Recommended in HSA document.	Default	-118.7154847	34.2303079
Group 3	Surface	57	North of Building 4100	Gamma anomaly.	Default	-118.7154192	34.23035023
Group 3	Subsurface	57	North of Building 4100	Gamma anomaly.	Default	-118.7154192	34.23035023
Group 3	Subsurface	58	North of Building 4100	Recommended in HSA document.	Default	-118.7151956	34.23028861
Group 3	Subsurface	59	East of Building 4100	Recommended in HSA document.	Default	-118.7151144	34.23019226
Group 3	Surface	60	East of Building 4100 on hold up tank	OS area, hold up tank.	Default	-118.7150343	34.23022356
Group 3	Subsurface	60	East of Building 4100 on hold up tank	OS area, hold up tank.	Default	-118.7150343	34.23022356
Group 3	Surface	61	East of Building 4100	OS area, on hold up tank.	Default	-118.7150391	34.23017739
Group 3	Subsurface	61	East of Building 4100	OS area, on hold up tank.	Default	-118.7150391	34.23017739
Group 3	Surface	62	East of Building 4100	Stain, along drainage pathway HSA.	Default	-118.714917	34.23023475
Group 3	Subsurface	62	East of Building 4100	Stain, along drainage pathway HSA.	Default	-118.714917	34.23023475
Group 3	Subsurface	63	East of Building 4100	Stain, OS area.	Default	-118.7149565	34.23020012
Group 3	Subsurface	64	East of Building 4100	Stain, OS area, septic tank.	Default	-118.7149687	34.23015495
Group 3	Surface	65	East of Building 4100	Geophysical anomaly, stain.	Default	-118.7147549	34.23020197
Group 3	Subsurface	65	East of Building 4100	Geophysical anomaly, stain.	Default	-118.7147549	34.23020197
Group 3	Surface	66	East of Building 4100	Geophysical anomaly, previous excavation, MTMM, stain, chemical use area/debris field.	Default	-118.7146132	34.23016295
Group 3	Subsurface	66	East of Building 4100	Geophysical anomaly, previous excavation, MMTM, stain, chemical use area/debris field.	Default	-118.7146132	34.23016295
Group 3	Surface	67	Open area between 22nd and 23rd street	OS area, WDA, possible debris field, MMTM area, previous remedial excavation area.	Default	-118.7143121	34.23024132
Group 3	Subsurface	67	Open area between 22nd and 23rd street	OS area, WDA, possible debris field, MMTM area, previous remedial excavation area.	Default	-118.7143121	34.23024132
Group 3	Surface	68	Open area between 22nd and 23rd street	OS area, waste disposal area, previous remedial excavation area, Geophysical anomaly.	Default	-118.7141897	34.23023133
Group 3	Subsurface	68	Open area between 22nd and 23rd street	OS area, WDA, previous remedial excavation area, Geophysical anomaly.	Default	-118.7141897	34.23023133
Group 3	Surface	69	Open area between 22nd and 23rd street	OS area, previous remedial excavation area.	Default	-118.7140895	34.23024189
Group 3	Subsurface	69	Open area between 22nd and 23rd street	OS area, previous remedial excavation area.	Default	-118.7140895	34.23024189
Group 3	Subsurface	70	West of Building 4100	Recommended in HSA document.	Default	-118.7155335	34.23009911
Group 3	Subsurface	71	East of Building 4100	Along septic tank line in HSA document.	Default	-118.71512	34.23010455
Group 3	Surface	72	South section of open area between 22nd street and 23rd street	OS area, stain, waste disposal area, previous remedial excavation area.	Default	-118.7142131	34.23009032
Group 3	Subsurface	72	South section of open area between 22nd street and 23rd street	OS area, stain, waste disposal area, previous remedial excavation area.	Default	-118.7142131	34.23009032
Group 3	Drainage	73	Drainage south of Building 4100	Drainage (recommended in HSA).	Default	-118.7154634	34.22993302
Group 3	Subsurface	74	South of Building 4100	Recommended in HSA document.	Default	-118.7154206	34.22999628
Group 3	Subsurface	75	South of Building 4100	Recommended in HSA document.	Default	-118.7152075	34.22999154
Group 3	Surface	76	East of Building 4100	OS area, previous soil radiation detection location, leachfield.	Default	-118.7149494	34.23001106
Group 3	Subsurface	76	East of Building 4100	OS area, previous soil radiation detection location, leachfield.	Default	-118.7149494	34.23001106
Group 3	Surface	77	East of Building 4100	Geophysical anomaly, OS area, leachfield.	Default	-118.7147652	34.23001365
Group 3	Subsurface	77	East of Building 4100	Geophysical anomaly, OS area, leachfield.	Default	-118.7147652	34.23001365
Group 3	Surface	78	Open area west of 24th street and north of G street	Drainage area, previous soil radiation detection location.	Default	-118.714522	34.22996429
Group 3	Subsurface	78	Open area west of 24th street and north of G street	Drainage area, previous soil radiation detection location.	Default	-118.714522	34.22996429
Group 3	Surface	79	South section of open area between 22nd street and 23rd street	OS area, and stain.	Default	-118.7143064	34.23000286
Group 3	Subsurface	79	South section of open area between 22nd street and 23rd street	OS area, and stain.	Default	-118.7143064	34.23000286

Table 1
Summary of Soil Sample Locations in Subarea 5C

Grouping	Sample Type	Location ID	Location Description	Technical Justification	Analytical Suite[1, 2, 3]	X_WGS84	Y_WGS84
Group 3	Surface	80	South section of open area between 22nd street and 23rd street	OS area, and stain.	Default	-118.7141511	34.22999478
Group 3	Subsurface	80	South section of open area between 22nd street and 23rd street	OS area, and stain.	Default	-118.7141511	34.22999478
Group 3	Subsurface	81	SE corner of open area between 22nd street and 23rd street	Gamma anomaly, stain.	Default	-118.7140555	34.22991347
Group 3	Subsurface	140	West of Building 4662	Added per Stakeholder request on October 5, 2010.	Default	-118.71405	34.2300078
Group 4	Surface	82	Northwest of Building 4463	General coverage decided in September 23, 2010 meeting.	Default	-118.7139353	34.2305416
Group 4	Subsurface	82	Northwest of Building 4463	General coverage decided in September 23, 2010 meeting.	Default	-118.7139353	34.2305416
Group 4	Subsurface	83	Sanitary sewer northwest of Building 4462	Gamma anomaly.	Default	-118.7134716	34.23064197
Group 4	Subsurface	84	Northeast of Building 4463	Gamma anomaly, strorage area.	Default	-118.713525	34.2305227
Group 4	Subsurface	85	North of Building 4462	Storage area.	Default	-118.7133742	34.23059336
Group 4	Surface	86	North footprint of Building 4760 footprint	HSA document.	Default	-118.7129765	34.23050107
Group 4	Subsurface	86	North footprint of Building 4760 footprint	HSA document.	Default	-118.7129765	34.23050107
Group 4	Surface	87	North of Building 4662, and west of Building 4462	Gamma anomaly, storage area, may have captured surface drainage.	Default	-118.713974	34.23024324
Group 4	Subsurface	87	North of Building 4662, and west of Building 4462	Gamma anomaly, storage area, may have captured surface drainage.	Default	-118.713974	34.23024324
Group 4	Surface	88	East of Building 4462	HSA document.	Default	-118.7131534	34.23027134
Group 4	Subsurface	88	East of Building 4462	HSA document.	Default	-118.7131534	34.23027134
Group 4	Storm Drain	89	Northeast of Building 4461	HSA document, storm drain/sanitary sewer container.	Default	-118.7129289	34.23024791
Group 4	Surface	90	Southeast of Building 4662	Along north-south trending storm drain, and may have captured surface drainage.	Default	-118.7139158	34.2300187
Group 4	Subsurface	90	Southeast of Building 4662	Along north-south trending storm drain, and may have captured surface drainage.	Default	-118.7139158	34.2300187
Group 4	Storm Drain	91	Southwest of impoudment, and south of Building 4463	Storm drain/sanitary sewer container.	Default	-118.7138609	34.22986756
Group 4	Subsurface	92	South of Building 4463, north of impoundment	Near impoundment, may have captured surface flow.	Default	-118.7136725	34.23006553
Group 4	Subsurface	93	South-southwest of Building 4462	Gamma anomaly.	Default	-118.7134635	34.23005583
Group 4	Subsurface	94	South of Building 4462	Gamma anomaly.	Default	-118.7134659	34.22991782
Group 4	Subsurface	138	South of Building 4662, located inside in the bottom of the concrete lined IM	Added per Stakeholder request on October 5, 2010, also identified as an IM in aerial photographs.	Default	-118.713683	34.230001
Group 4	Subsurface	139	South of Building 4662, located inside in the bottom of the concrete lined IM	Added per Stakeholder request on October 5, 2010, also identified as an IM in aerial photographs.	Default	-118.713768	34.230000
Group 4	Surface	95	Southwest of Building 4461	HSA document, and near former storage tank location along interview line.	Default	-118.7132583	34.22997586
Group 4	Subsurface	95	Southwest of Building 4461	HSA document, and near former storage tank location along interview line.	Default	-118.7132583	34.22997586
Group 4	Surface	96	South-southwest footprint of Building 4461	Possible OS area.	Default	-118.7131186	34.23000061
Group 4	Subsurface	96	South-southwest footprint of Building 4461	Possible OS area.	Default	-118.7131186	34.23000061
Group 4	Surface	97	South-southeast footprint of Building 4461	Geophysical anomaly, HSA document, and possible OS area.	Default	-118.7130041	34.22997282
Group 4	Subsurface	97	South-southeast footprint of Building 4461	Geophysical anomaly, HSA document, and possible OS area.	Default	-118.7130041	34.22997282
Group 5	Surface	98	Open space west of former Building 4486	Ground scar.	Default	-118.7127266	34.23056607
Group 5	Subsurface	98	Open space west of former Building 4486	Ground scar.	Default	-118.7127266	34.23056607
Group 5	Surface	99	Center footprint of former Building 4486	Ground scar.	Default	-118.7124299	34.23056331
Group 5	Subsurface	99	Center footprint of former Building 4486	Ground scar.	Default	-118.7124299	34.23056331
Group 5	Surface	100	Open space NW of former Building 4483, and SE of former Building 4486	Probable Stain.	Default	-118.712004	34.23064197
Group 5	Subsurface	100	Open space NW of former Building 4483, and SE of former Building 4486	Probable Stain.	Default	-118.712004	34.23064197
Group 5	Surface	101	Open space north of former Building 4483	Probable Stain.	Default	-118.7118292	34.23054882
Group 5	Subsurface	101	Open space north of former Building 4483	Probable Stain.	Default	-118.7118292	34.23054882
Group 5	Subsurface	102	Immediately northwest of former Building 4487	Geophysical anomaly and ground scar.	Default	-118.7127924	34.23039262

Table 1
Summary of Soil Sample Locations in Subarea 5C

Grouping	Sample Type	Location ID	Location Description	Technical Justification	Analytical Suite[1, 2, 3]	X_WGS84	Y_WGS84
Group 5	Surface	103	Northeast footprint of former Building 4487	Ground scar.	Default	-118.712565	34.23028305
Group 5	Subsurface	103	Northeast footprint of former Building 4487	Ground scar.	Default	-118.712565	34.23028305
Group 5	Surface	104	Center footprint of former Building 4485	Ground scar.	Default	-118.7123466	34.23033993
Group 5	Subsurface	104	Center footprint of former Building 4485	Ground scar.	Default	-118.7123466	34.23033993
Group 5	Storm Drain	105	Storm drain NE of former Parking Lot 4538 and SE of former Building 4483	Inside storm drain container.	Default	-118.7113622	34.23030665
Group 5	Subsurface	106	Immediately west of former Building 4487	Geophysical anomaly and ground scar.	Default	-118.7127886	34.23014872
Group 5	Surface	107	Southwest footprint of former Building 4487	Geophysical anomaly and ground scar.	Default	-118.7126977	34.23003934
Group 5	Subsurface	107	Southwest footprint of former Building 4487	Geophysical anomaly and ground scar.	Default	-118.7126977	34.23003934
Group 5	Surface	108	South Center footprint of former Building 4487	Geophysical anomaly and ground scar.	Default	-118.7126247	34.23006784
Group 5	Subsurface	108	South Center footprint of former Building 4487	Geophysical anomaly and ground scar.	Default	-118.7126247	34.23006784
Group 5	Subsurface	109	East footprint of former Building 4487	Ground scar.	Default	-118.7125545	34.23011784
Group 5	Subsurface	110	OS E of former Building 4487, S former Building 4485, W former Building 4482	Leachfield, ground scar.	Default	-118.7123372	34.23012092
Group 5	Subsurface	111	Southwest footprint of former Building 4482	Leachfield.	Default	-118.7121206	34.23013421
Group 5	Surface	112	East footprint of former Parking Lot 4538	Low area and potential collection point of contaminated runoff.	Default	-118.7112627	34.23008787
Group 5	Subsurface	112	East footprint of former Parking Lot 4538	Low area of site for possible collection of runoff?	Default	-118.7112627	34.23008787
Group 5	Storm Drain	113	Storm drain located east of former pkg lot 4538	Inside storm drain container.	Default	-118.7108562	34.23015487
Group 5	Storm Drain	114	Storm drain SW of former Building 4487	Inside storm drain container.	Default	-118.7127986	34.22988952
Group 6	Drainage	115	North of Building 4015	Western and northern storm drain/drainage ditch.	Default	-118.7126482	34.22966849
Group 6	Drainage	116	Northeast corner of field, east of Building 4015	Drainage linked to drainage ditch outlet.	Default	-118.7108575	34.22993903
Group 6	Drainage	117	Northeast corner of field, east of Building 4015	Previous soil radiation detection location, drainage outlet.	Default	-118.710887	34.22990525
Group 6	Subsurface	118	Field northeast of Building 4015	Geophysical anomaly.	Default	-118.712378	34.22943837
Group 6	Subsurface	119	East of Building 4015	Geophysical anomaly.	Default	-118.7122812	34.22932397
Group 6	Surface	120	Field east of Building 4015	Geophysical anomaly, aerial - fill area, debris field.	Default	-118.712052	34.22944202
Group 6	Subsurface	120	Field east of Building 4015	Geophysical anomaly, aerial - fill area, debris field.	Default	-118.712052	34.22944202
Group 6	Drainage	121	Northeast field of Building 4015	Along drainage ditch, previous soil radiation detection location.	Default	-118.7118958	34.22958625
Group 6	Surface	122	Northeast field of Building 4015	Previous soil radiation detection location.	Default	-118.7112761	34.22958282
Group 6	Subsurface	122	Northeast field of Building 4015	Previous soil radiation detection location.	Default	-118.7112761	34.22958282
Group 6	Drainage	123	Field east of Building 4015	Between drainage ditch and intermittent stream.	Default	-118.7108849	34.22966294
Group 6	Surface	124	East of Building 4015	Geophysical anomaly.	Default	-118.7108072	34.22953251
Group 6	Subsurface	124	East of Building 4015	Geophysical anomaly.	Default	-118.7108072	34.22953251
Group 6	Surface	125	Southeast corner of Building 4015	Dark toned material/possible leakage.	Default	-118.7125073	34.22911926
Group 6	Subsurface	125	Southeast corner of Building 4015	Dark toned material/possible leakage.	Default	-118.7125073	34.22911926
Group 6	Subsurface	126	Field southeast of Building 4015	Geophysical anomaly.	Default	-118.7122683	34.22906581
Group 6	Surface	127	Field SE of Building 4015, and east of former Building 4343	Geophysical anomaly.	Default	-118.7122675	34.22894113
Group 6	Subsurface	127	Field SE of Building 4015, and east of former Building 4343	Geophysical anomaly.	Default	-118.7122675	34.22894113
Group 6	Surface	128	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7121739	34.22923864
Group 6	Subsurface	128	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7121739	34.22923864
Group 6	Surface	129	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7120685	34.2291059
Group 6	Subsurface	129	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7120685	34.2291059
Group 6	Surface	130	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7119263	34.22928362

Table 1
Summary of Soil Sample Locations in Subarea 5C

Grouping	Sample Type	Location ID	Location Description	Technical Justification	Analytical Suite[1, 2, 3]	X_WGS84	Y_WGS84
Group 6	Subsurface	130	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7119263	34.22928362
Group 6	Subsurface	131	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.71175	34.2292139
Group 6	Surface	132	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.711632	34.22935963
Group 6	Subsurface	132	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.711632	34.22935963
Group 6	Surface	133	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7115908	34.22924679
Group 6	Subsurface	133	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7115908	34.22924679
Group 6	Surface	134	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7114493	34.22917492
Group 6	Subsurface	134	Field east of Building 4015	Geophysical anomaly, aerial - fill area.	Default	-118.7114493	34.22917492
Group 6	Drainage	135	Northeast field of Building 4015	Along drainage ditch, previous soil radiation detection location.	Default	-118.7113573	34.22936655
Group 6	Drainage	136	Field east of Building 4015	Drainage ditch.	Default	-118.7109019	34.22940284
Group 6	Surface	137	Field east of Building 4015	Geophysical anomaly.	Default	-118.7107696	34.22934893
Group 6	Subsurface	137	Field east of Building 4015	Geophysical anomaly.	Default	-118.7107696	34.22934893

Notes:

All surface samples are collected from 0-0.5 feet below ground surface. The subsurface interval will be identified in the field based on the gamma log results.

[1]Default suite includes the radionuclide analysis shown in Table 2.4 of the Field Sampling Plan for Soil Sampling (HGL, 2010a).

[2]Site-specific indicates that H-3, Ni-63, Ni-59, Tc-99 will be added to the suite of radiological laboratory analysis identified in Table 2.4 of the Field Sampling Plan for Soil Sampling (HGL, 2010a).

[3]C-14 is added to the analytical suite in approximately 10 samples to account for potential drift from C-14 that may have been used in rocket fuels

AST - abovegound storage tank

D&D - decontamination and decommissioning

HSA - Historical Site Assessment

IM - impoundment

OS - open storage

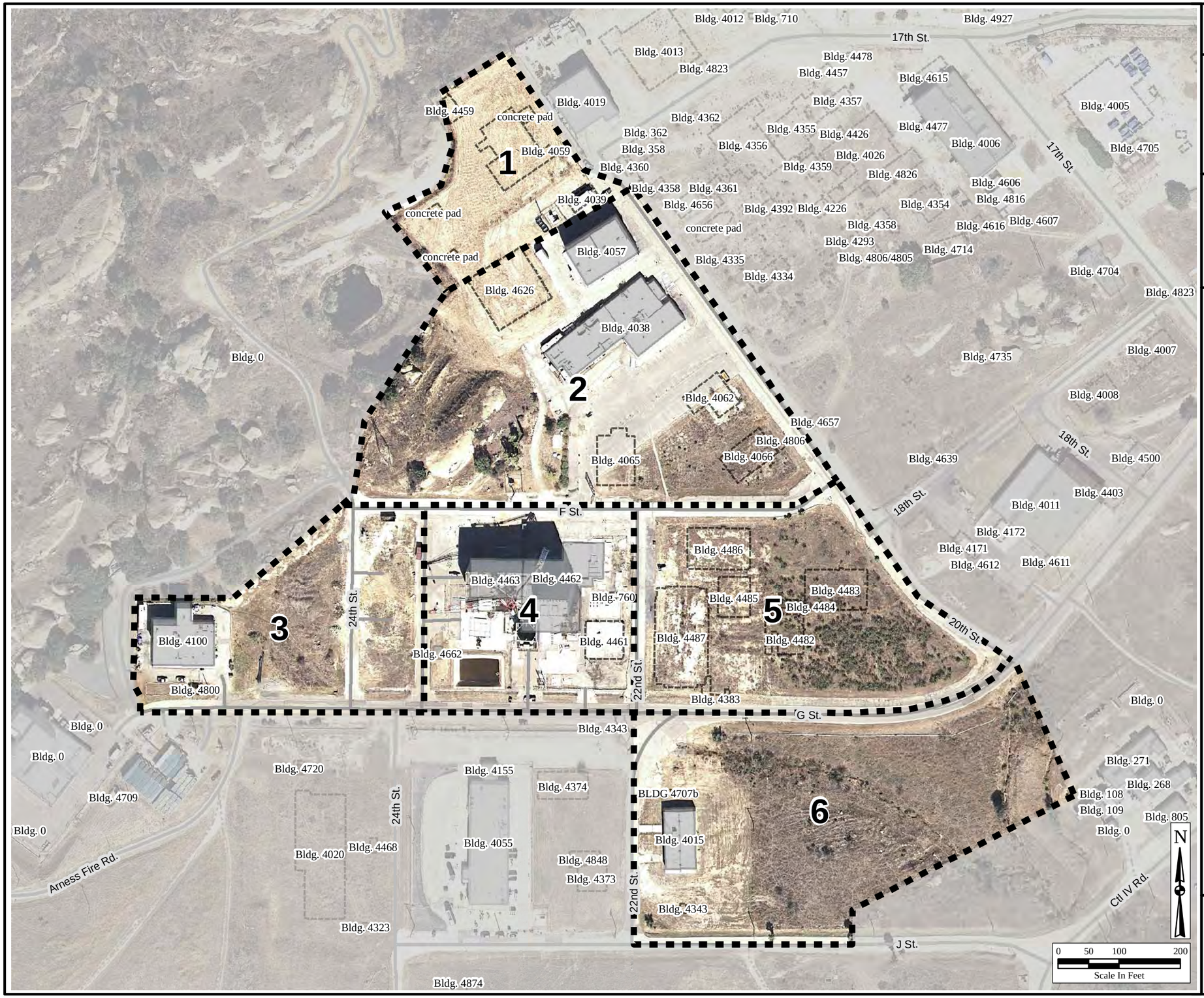
MTMM - medium toned mounded material

SS - site-specific

SSFL - Santa Susana Field Laboratory

WDA - waste disposal area

FIGURES



HGL—Subarea 5C Addendum to FSP for Soil Sampling for Area IV Radiological Study, SSFL—Ventura County, CA

Figure 1
Subarea 5C Base Map
Santa Susana Field Laboratory

U.S. EPA Region 9

Legend

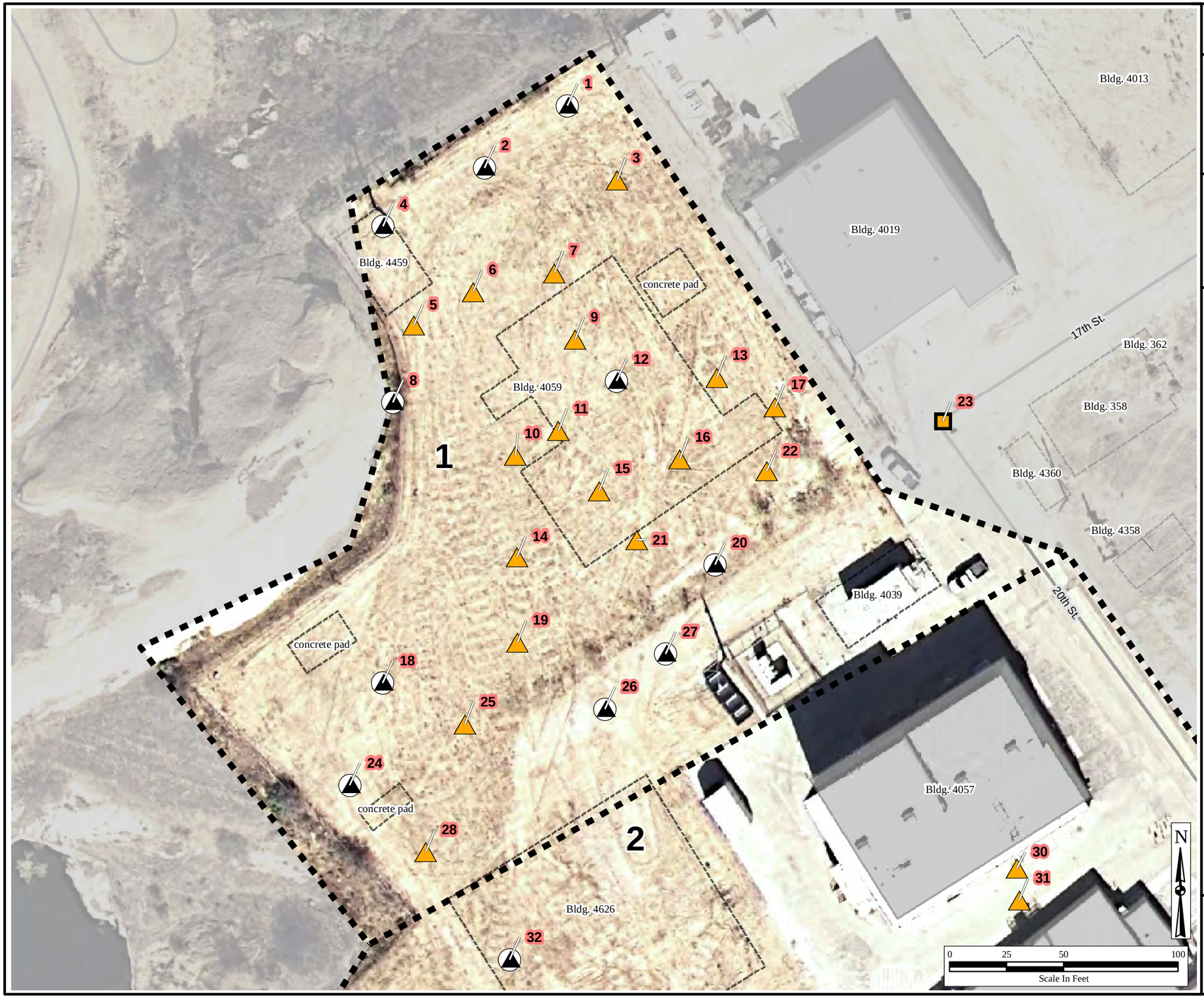
Buildings:

- Demolished
- Existing

1 - 6 Subarea 5C Groups

Filepath: Y:/Santa_Susana/EP9038/Soil_Sampling/SubArea5C/(1)Subarea5C_BaseMap_11x17.mxd
Project: EP9038
Edited By: PBillock 20101001
Source: HGL 2010, CIRGIS 2007

HGL HydroGeoLogic, Inc



HGL—Subarea 5C Addendum to FSP for Soil Sampling for Area IV Radiological Study, SSFL—Ventura County, CA

Figure 2
Subarea 5C Group 1 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9

Legend

1 - 6 Subarea 5C Groups

Proposed Sample Locations

Sample Type:

- Drainage Sample
- Storm Drain or Sewer Sample
- Subsurface Sample
- Surface and Subsurface Sample

Buildings:

- Demolished
- Existing

Filepath: Y:/Santa_Susana/EP9038/Soil_Sampling/SubArea5C/(2)Group1ProposedSampleLocations_11x17.mxd
Project: EP9038
Edited By: PBillock 20101001
Source: HGL 2010, CIRGIS 2007

HGL HydroGeoLogic, Inc

HGL—Subarea 5C Addendum to FSP for Soil Sampling for Area IV Radiological Study, SSFL—Ventura County, CA

Figure 3
Subarea 5C Group 2 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9

Legend

1 - 6 Subarea 5C Groups

Proposed Sample Locations

Sample Type:

- Drainage Sample
- Storm Drain or Sewer Sample
- Subsurface Sample
- Surface and Subsurface Sample

Buildings:

- Demolished
- Existing

Filepath: Y:/Santa_Susana/EP9038/Soil_Sampling/SubArea5C/(3)Group2ProposedSampleLocations_11x17.mxd
Project: EP9038
Edited By: PBillock 20101001
Source: HGL 2010, CIRGIS 2007

HGL HydroGeoLogic, Inc

HGL—Subarea 5C Addendum to FSP for Soil Sampling for Area IV Radiological Study, SSFL—Ventura County, CA

Figure 4
Subarea 5C Group 3 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9

Legend

1 - 6 Subarea 5C Groups

Proposed Sample Locations

Sample Type:

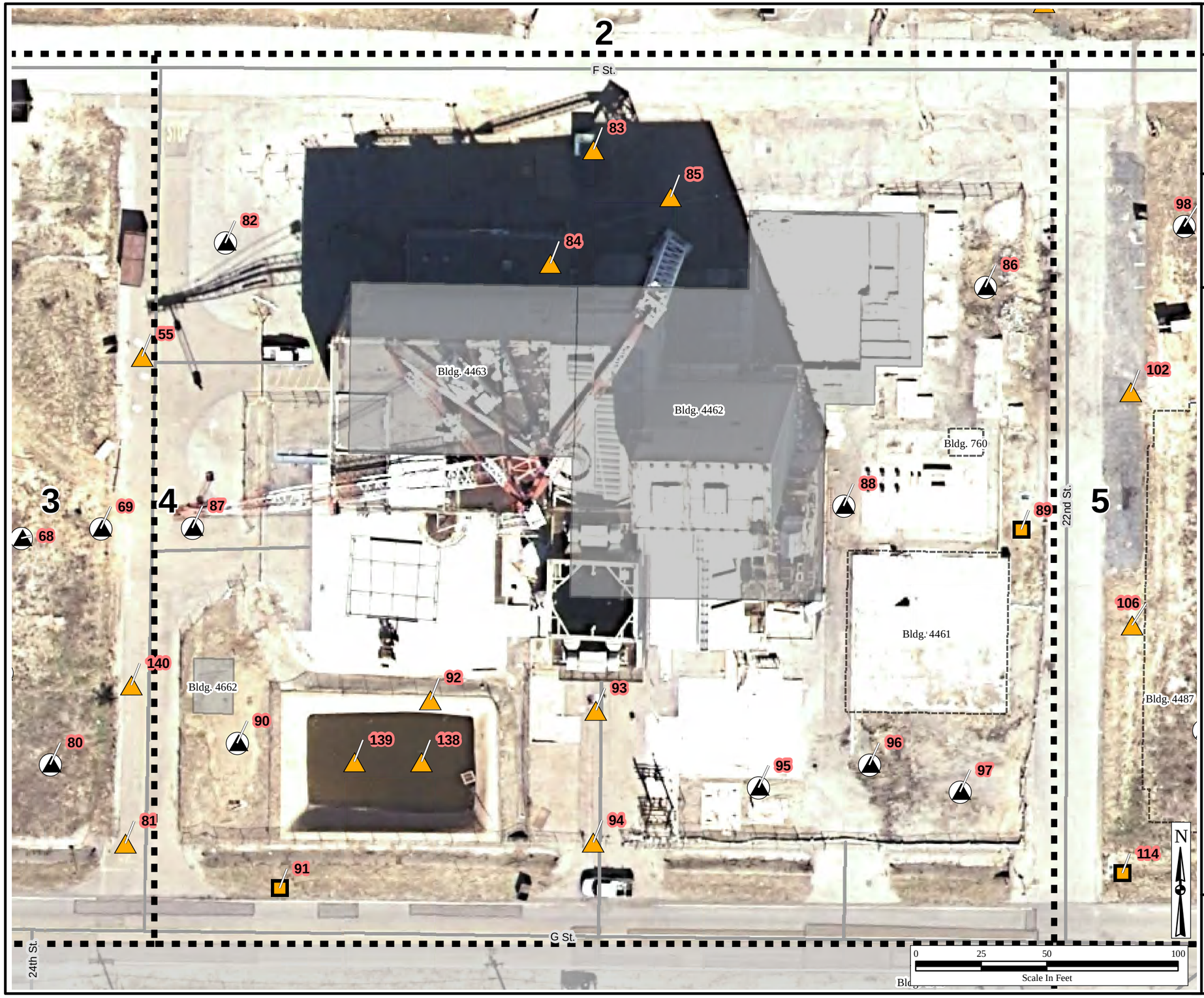
- Drainage Sample
- Storm Drain or Sewer Sample
- Subsurface Sample
- Surface and Subsurface Sample

Buildings:

- Demolished
- Existing

Filepath: Y:/Santa_Susana/EP9038/Soil_Sampling/SubArea5C/(4)Group3ProposedSampleLocations_11x17.mxd
Project: EP9038
Edited By: PBillock 20101001
Source: HGL 2010, CIRGIS 2007

HGL HydroGeoLogic, Inc



HGL—Subarea 5C Addendum to FSP for Soil Sampling for Area IV Radiological Study, SSFL—Ventura County, CA

Figure 5
Subarea 5C Group 4 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9

Legend

1 - 6 Subarea 5C Groups

Proposed Sample Locations

? <all other values>

Sample Type:

- Drainage Sample
- Storm Drain or Sewer Sample
- Subsurface Sample
- Surface and Subsurface Sample

Buildings:

- Demolished
- Existing

Filepath: Y:/Santa_Susana/EP9038/Soil_Sampling/SubArea5C/(5)Group4ProposedSampleLocations_11x17.mxd
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Edited By: PBillock 20101001
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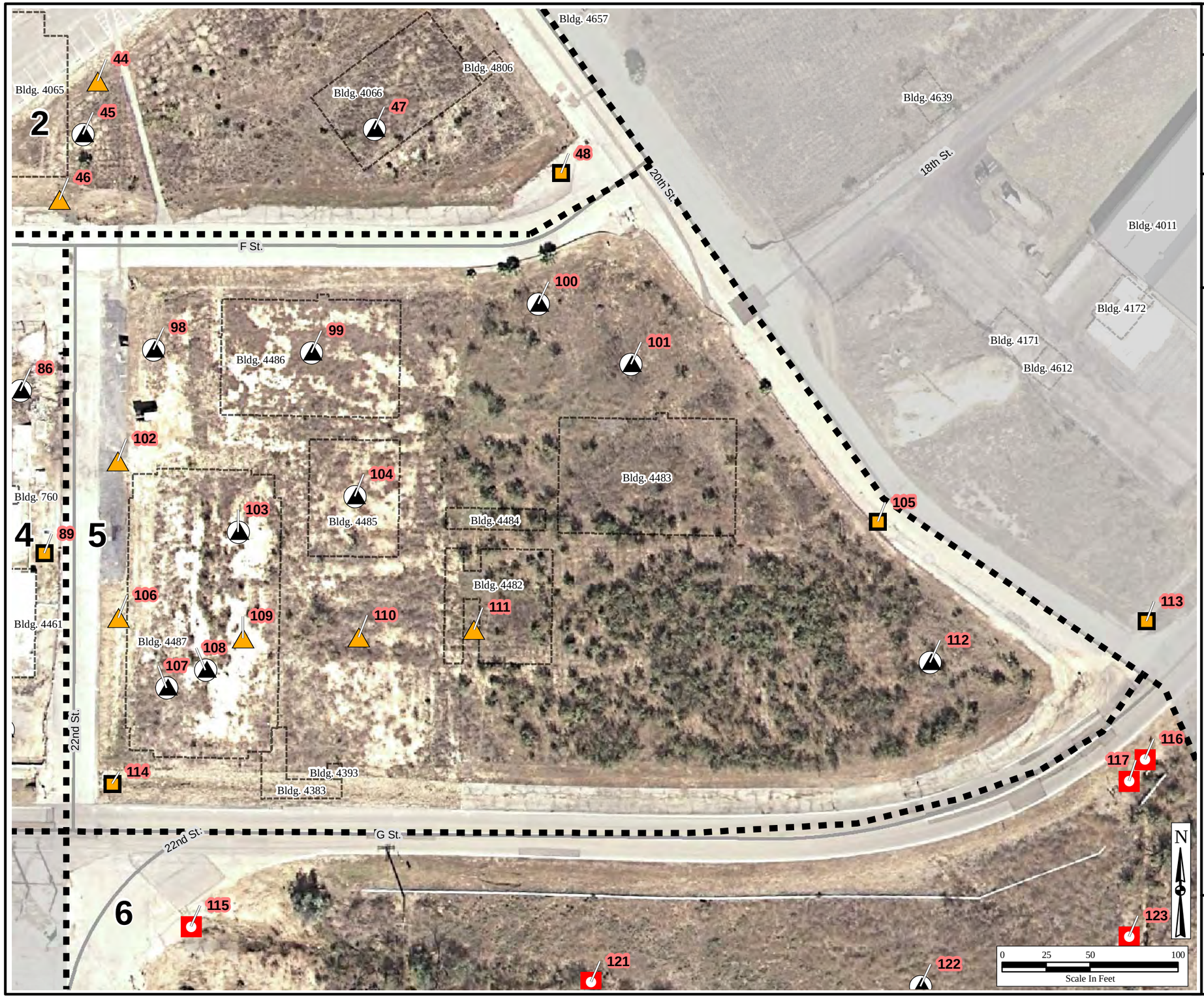
HGL HydroGeoLogic, Inc



HGL—Subarea 5C Addendum to FSP for Soil Sampling for Area IV Radiological Study, SSFL—Ventura County, CA

Figure 6
Subarea 5C Group 5 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9

Legend

1 - 6 Subarea 5C Groups

Proposed Sample Locations

Sample Type:

- Drainage Sample
- Storm Drain or Sewer Sample
- Subsurface Sample
- Surface and Subsurface Sample

Buildings:

- Demolished
- Existing

Filepath: Y:/Santa_Susana/EP9038/Soil_Sampling/SubArea5C/(6)Group5ProposedSampleLocations_11x17.mxd
Project: EP9038
Edited By: PBillock 20101001
Source: HGL 2010, CIRGIS 2007

HGL HydroGeoLogic, Inc

HGL—Subarea 5C Addendum to FSP for Soil Sampling for Area IV Radiological Study, SSFL—Ventura County, CA

Figure 7
Subarea 5C Group 6 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9

Legend

1 - 6 Subarea 5C Groups

Proposed Sample Locations

Sample Type:

- Drainage Sample
- Storm Drain or Sewer Sample
- Subsurface Sample
- Surface and Subsurface Sample

Buildings:

- Demolished
- Existing

Filepath: Y:/Santa_Susana/EP9038/Soil_Sampling/SubArea5C/(7)Group6ProposedSampleLocations_11x17.mxd
Project: EP9038
Edited By: PBillock 20101001
Source: HGL 2010, CIRGIS 2007

HGL HydroGeoLogic, Inc

APPENDIX A

Legend

HSA Sub-Area 5C Boundary

Centerline Roads

- Primary Roads
- Secondary Roads
- Tertiary Roads

Buildings

- Demolished
- Existing

Geophysical Anomaly

Surface Water

- Intermittent Stream
- Permanent Stream
- Surface Water
- Lined Channel

Surface Water Flow

- Surface Water Flow (From Boeing Database, 2008)

Surface Features

- Channel
- Drain
- Drain
- Drainage Divide
- Gutter
- Tank
- Tank
- Vault
- Well

Utilities

- Gas
- Storm Drain
- Sanitary Sewer
- Water
- Water (Removed)
- Water (Removed)
- Pipes (Unknown Type)
- Pipes (Unknown Type)

N

0 50 100 200

Scale In Feet

DRAFT

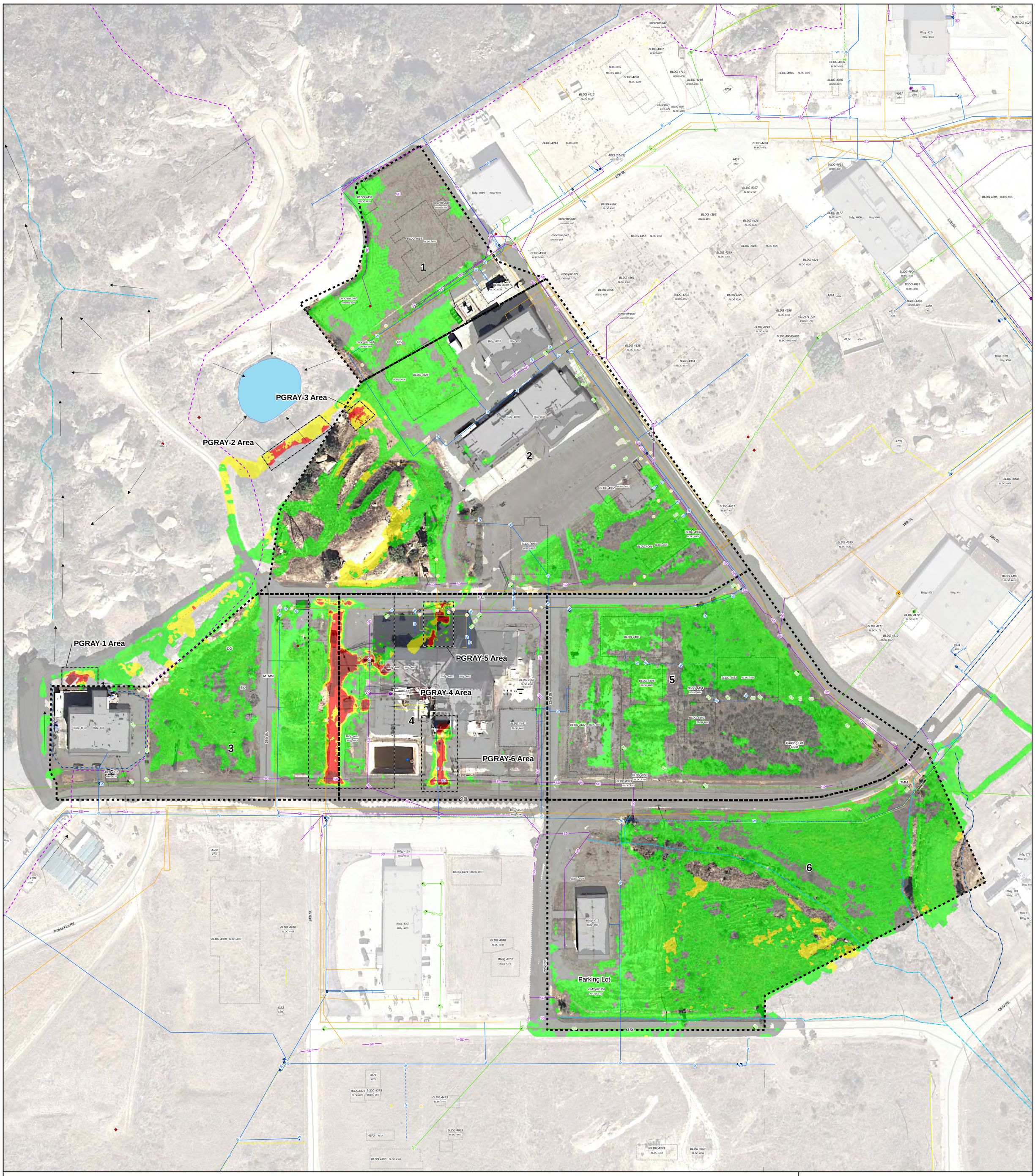
Historical Site Assessment
Revised Draft Technical Memorandum - HSA-5C

Geophysical Anomaly Subarea 5C Santa Susana Field Laboratory

U.S. EPA Region 9

Filepath:Y:/Santa_Susana/EP9038/TM/HSA_5C/HSA-5C_Plate1_Geophysical.mxd
Project: EP9038
Edited: 10/01/10 PL
Source:Boeing Company, 2008
CIRGIS, 2007

HGL HydroGeoLogic, Inc



Legend

HSA Sub-Area 5C Boundary

Centerline Roads
- Primary Roads
- Secondary Roads
- Tertiary Roads

Buildings
- Demolished
- Existing

Gamma Total Count (cps)

12700 14100 15500 16900

Potential GRAY Area

Surface Water
- Intermittent Stream
- Permanent Stream
- Surface Water
- Lined Channel

Surface Water Flow
- Surface Water Flow (From Boeing Database, 2008)

Surface Features
- Channel
- Drain
- Drain
- Drainage Divide
- Gutter
- Tank
- Tank
- Vault
- Well

Utilities
- Gas
- Storm Drain
- Sanitary Sewer
- Water
- Water (Removed)
- Water (Removed)
- Pipes (Unknown Type)
- Pipes (Unknown Type)

N

0 50 100 200
Scale In Feet

Gamma Radiation Anomalies Subarea 5C Santa Susana Field Laboratory

U.S. EPA Region 9

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Edited: 08/20/10 TJ
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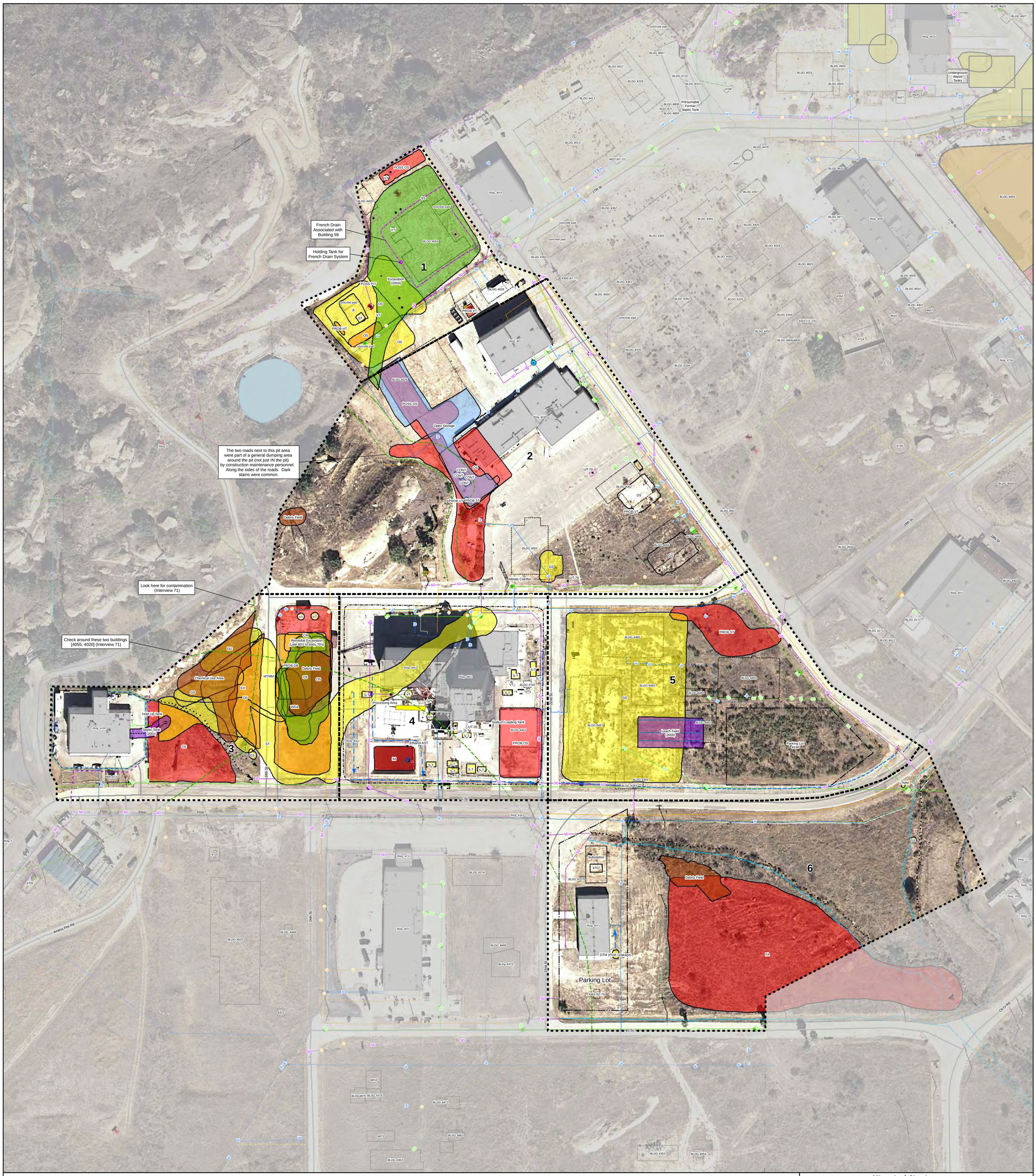
CIRGIS, 2007

HGL HydroGeoLogic, Inc



Legend

HSA Sub-Area 5C Boundary

Centerline Roads
- Primary Roads
- Secondary Roads
- Tertiary Roads

Buildings
- Demolished
- Existing

Surface Water
- Intermittent Stream
- Permanent Stream
- Lined Channel

Tanks
- Above ground Storage Tank
- Underground Storage Tank
- Unknown Tank Type
- French Drain Holding Tank
- Sump
- Dry Well
- Tank Footprint

- French Drain
- Drainage
- Leach Field
- Septic System
- Drainage
- Drainage Ditch
- Interview Line

- Chemical Use Area / Debris Field
- Excavation
- Leach Field / Septic Tank
- Open Storage
- Parking Lots

- Offsite Seeps and Springs
- Onsite Seeps and Springs
- Drain
- Well

Surface Water Flow
- Surface Water Flow (From Boeing Database, 2008)
- Water (Removed)
- Water (Removed)
- Pipes (Unknown Type)
- Pipes (Unknown Type)

Aerial Photography Descriptors

Type	Description
B	Building
CONT	Container
CR	Crates
DB	Debris
DG	Disturbed Ground
DTM	Dark Tone Material
EX	Excavation
FA	Fill Area
GS	Ground Scar
HT	Horizontal Tank
IM	Impoundment
MTMM	Medium Toned Mounded Material
OS	Open Storage
PA	Processing Area
PL	Parking Lot
POSS	Possible
PROB	Probable
S-T	Storage Tank
SS	Smoke Stack
ST	Stain
VT	Vertical Tank
WDA	Waste Disposal Area

Processing Area (Priority 1)

Utilities
- Gas
- Storm Drain
- Sanitary Sewer
- Water

Surface Features
- Channel
- Drain
- Drainage Divide
- Gutter
- Tank
- Vault
- Well

N

0 50 100 200
Scale In Feet

Historical Site Assessment
Revised Draft Technical Memorandum - HSA-5C

Sub Area HSA-5C
Subarea 5C
Santa Susana Field Laboratory

U.S. EPA Region 9

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Filepath:Y:/Santa_Susana/EP9038/TM/HSA_5C/HSA-5C_Subarea.mxd
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Edited: 10/01/10 PL
Source:Boeing Company, 2008
CIRGIS, 2007

HGL HydroGeoLogic, Inc

Isotope	Value	MDA	Units	Non Detect
Cs-137	0.0432	0.0864	pCi/g	ND

Isotope	Value	MDA	Units
Cs-137	0.1920	0.0545	pCi/g
Cs-137	0.0653	0.0554	pCi/g
Cs-137	0.0262	0.0433	pCi/g
Cs-137	0.4380	0.09	pCi/g
Cs-137	0.3500	0.094	pCi/g
Cs-137	0.2300	0.0677	pCi/g
Cs-137	0.0858	0.044	pCi/g
Cs-137	0.0457	0.0206	pCi/g
Cs-137	0.1430	0.0321	pCi/g
Cs-137	0.2370	0.0636	pCi/g
Cs-137	0.0858	0.045	pCi/g

Isotope	Value	MDA	Units
Cs-137	0.2300		pCi/g
K-40	19.0000		pCi/g
Pu-239/24	0.0080	0.005	pCi/g
Ra-226	0.6800		pCi/g
Th-228	0.6200	0.1	pCi/g
Th-230	0.5000	0.07	pCi/g
Th-232	0.5600	0.07	pCi/g
U-233/234	0.5200	0.01	pCi/g
U-235	0.0180	0.005	pCi/g
U-238	0.5000	0.01	pCi/g

Isotope	Value	MDA	Units
Cs-137	0.0900		pCi/g
K-40	19.0000		pCi/g
Pu-239/24	0.0070	0.004	pCi/g
Ra-226	0.7700		pCi/g
Th-228	0.8400	0.1	pCi/g
Th-230	0.6200	0.07	pCi/g
Th-232	0.8500	0.05	pCi/g
U-233/234	0.6300	0.01	pCi/g
U-235	0.0420	0.006	pCi/g
U-238	0.6200	0.01	pCi/g

Isotope	Value	MDA	Units
K-40	26.2300	0.6836	pCi/g

Isotope	Value	MDA	Units	Non Detect
Cs-137	0.0472	0.0944	pCi/g	ND

Isotope	Value	MDA	Units
K-40	16.2900		pCi/g

Isotope	Value	MDA	Units
Be-7	0.4400		pCi/g
Co-60	0.0400		pCi/g
K-40	21.0000		pCi/g
Ra-226	0.5800		pCi/g
Th-228	1.2000	0.07	pCi/g
Th-230	0.6800	0.03	pCi/g
Th-232	0.7900	0.02	pCi/g
U-233/234	0.6800	0.01	pCi/g
U-235	0.0230	0.006	pCi/g
U-238	0.5900	0.01	pCi/g

Isotope	Value	MDA	Units	Non Detect
Cs-137	0.0470	0.094	pCi/g	ND

Isotope	Value	MDA	Units
Cs-137	0.2000		pCi/g
K-40	21.0000		pCi/g
Pu-239/24	0.0030	0.003	pCi/g
Ra-226	0.8600		pCi/g
Th-228	0.8800	0.05	pCi/g
Th-230	0.7000	0.03	pCi/g
Th-232	0.8900	0.02	pCi/g
U-233/234	0.6800	0.01	pCi/g
U-235	0.0320	0.006	pCi/g
U-238	0.6900	0.01	pCi/g

Isotope	Value	MDA	Units
Cs-137	0.0700		pCi/g
K-40	15.0000		pCi/g
Pu-239/24	0.0060	0.005	pCi/g
Ra-226	0.7500		pCi/g
Th-228	0.8000	0.07	pCi/g
Th-230	0.5700	0.05	pCi/g
Th-232	0.7200	0.03	pCi/g
U-233/234	0.8400	0.01	pCi/g
U-235	0.0390	0.006	pCi/g
U-238	0.7600	0.01	pCi/g

Isotope	Value	MDA	Units
K-40	16.0000		pCi/g
Ra-226	0.6400		pCi/g
Sr-90	0.0560	0.05	pCi/g
Th-228	0.9600	0.05	pCi/g
Th-230	0.7500	0.02	pCi/g
Th-232	0.9200	0.02	pCi/g
U-233/234	0.6800	0.01	pCi/g
U-235	0.0390	0.005	pCi/g
U-238	0.6700	0.01	pCi/g

Isotope	Value	MDA	Units
Cs-137	0.1900		pCi/g
K-40	19.0000		pCi/g
Ra-226	0.9100		pCi/g
Sr-90	0.0880	0.08	pCi/g
Th-228	1.2000	0.06	pCi/g
Th-230	1.0000	0.02	pCi/g
Th-232	1.0000	0.02	pCi/g
U-233/234	0.9700	0.01	pCi/g
U-235	0.0350	0.006	pCi/g
U-238	0.9200	0.01	pCi/g

Isotope	Value	MDA	Units
K-40	18.0000		pCi/g
Ra-226	0.6100		pCi/g
Th-228	1.3000	0.2	pCi/g
Th-230	1.3000	0.08	pCi/g
Th-232	1.5000	0.08	pCi/g
U-233/234	0.8400	0.01	pCi/g
U-235	0.0340	0.005	pCi/g
U-238	0.8700	0.01	pCi/g

Isotope	Value	MDA	Units
K-40	17.0000		pCi/g
Ra-226	1.0000		pCi/g
Sr-90	0.1200	0.09	pCi/g
Th-228	1.2000	0.09	pCi/g
Th-230	0.9200	0.04	pCi/g
Th-232	1.1000	0.04	pCi/g
U-233/234	0.7900	0.01	pCi/g
U-235	0.0510	0.004	pCi/g
U-238	0.7700	0.01	pCi/g

Legend

- Detected
- Non Detected
- HSA Sub-Area 5C Boundary

Centerline Roads

- Primary Roads
- Secondary Roads
- Tertiary Roads

Buildings

- Demolished
- Existing

DRAFT

N

0 50 100 200

Scale In Feet

Past Radiological Soil Investigations
Subarea 5C
Santa Susana Field Laboratory

U.S. EPA Region 9

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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HGL HydroGeoLogic, Inc