

**TABLE 3-1
MONITORING AND PRIVATE WELL INFORMATION**

**REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA**

Sort Number or Map Number	Location	Northing	Easting	Zone	Type	TOS (ft bgs)	BOS (ft bgs)	TD of Investigation (ft bgs)	Approx. Well Depth (ft btoc or bgs)	Installation Date	GS Elevation (ft amsl)	Top of Inner Casing (ft amsl)	Usage	Active
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1060	MW-60	1116865.11	479250.83	S&P Sands	MW	145	155	155	158.45	1/7/2005	28.59	28.33	Monitoring	Current	
1061	MW-61	1116779.19	478825.12	S&P Sands	MW	135	145	145	147.97	1/11/2005	27.86	27.5	Monitoring	Current	
1062	MW-62	1116772.95	480607.22	USAS	MW	17.5	22.5	23	22.11	1/5/2005	27.60	27.35	Monitoring	Current	
1063	MW-63	1116627.50	480603.50	USAS	MW	25	30	30	30.64	1/3/2005	27.64	27.37	Monitoring	Current	
1064	MW-64	1116199.25	480633.91	USAS	MW	25	30	30	30.98	1/3/2005	27.62	27.38	Monitoring	Current	
1065	MW-65	1116463.19	480341.58	USAS	MW	19	24	24	22.75	1/3/2005	29.14	28.76	Monitoring	Current	
1066	MW-66	1116662.47	480147.23	USAS	MW	18.5	23.5	23.5	22.72	1/4/2005	29.57	29.2	Monitoring	Current	
1067	MW-67	1116580.79	479798.76	USAS	MW	24	29	29	28.31	1/4/2005	31.14	30.79	Monitoring	Current	
1068	MW-68	1116674.70	479178.19	LSAS	MW	35.5	40.5	41	41.41	1/3/2005	28.86	28.6	Monitoring	Current	
1069	MW-69	1116855.08	478819.78	USAS	MW	23	28	28.8	28.45	1/4/2005	27.19	26.91	Monitoring	Current	
1070	MW-70	1116240.60	479613.10	USAS	MW	23	28	28.5	27.41	12/29/2004	32.06	31.89	Monitoring	Current	
1071	MW-71	1116240.70	479928.47	USAS	MW	24	29	29.5	28.28	12/29/2004	31.58	31.23	Monitoring	Current	
1072	MW-72	1116028.90	479405.60	USAS	MW	23.5	28.5	29	28.77	12/19/2004	31.37	30.97	Monitoring	Current	
1073	MW-73	1115538.70	478832.30	USAS	MW	22	27	27.4	26.84	1/4/2005	26.23	26.03	Monitoring	Current	
1074	MW-74	1115144.22	479094.30	USAS	MW	27.5	32.5	33	33.34	1/4/2005	28.14	27.9	Monitoring	Current	
1075	MW-75	1115028.65	479612.71	USAS	MW	39.5	44.5	45	43.95	1/3/2005	31.69	31.38	Monitoring	Current	
1076	MW-76	1115900.58	479939.64	USAS	MW	23	28	28	27.79	1/4/2005	31.08	30.84	Monitoring	Current	
1077	MW-77	1116024.22	480141.44	LSAS	MW	36	40.5	40.5	37.84	1/5/2005	30.06	29.73	Monitoring	Current	
1078	MW-78	1115643.12	479814.30	LSAS	MW	36	41	41	40.1	1/6/2005	30.48	30.23	Monitoring	Current	
1079	MW-79	1116346.06	480155.44	LSAS	MW	36	41	41	40.41	1/7/2005	30.47	30.11	Monitoring	Current	
1080	MW-80	1116029.30	479413.30	LSAS	MW	36	41	41	41.57	1/8/2005	31.49	30.99	Monitoring	Current	
1081	MW-81	1116469.48	479719.88	LSAS	MW	36	41	41	41.09	1/7/2005	31.23	31.01	Monitoring	Current	
1082	MW-82	1115136.58	479086.15	LSAS	MW	36.5	41.5	46	41.63	1/11/2005	27.44	27.24	Monitoring	Current	
1083	MW-83	1115973.29	481137.27	AF Gravels	MW	102	112	112	112	1/11/2005	25.70	25.51	Monitoring	Current	
1084	MW-84	1116125.10	479267.80	LSAS	MW	35.5	40.5	41	41.65	1/11/2005	31.52	31.15	Monitoring	Current	
1085	MW-85	1115122.86	479798.65	479413.30	LSAS										
				10841/34 0 Td (LSAS)Tj 8018 0 67Td [1/6/2005] 4203.6(30.67Tj 7.. 8)Tj 19.08A688Ct Td (27.79)Tj 2r03349.2(41)-4772.363-4361.4(46)Tj 23.0)-262Td (41.63)Tj											
									1078	MW-78					
												1084	MW-84	USAS	

Sort Number or Map Number	Location	Northing
1105	MW-105	1115423.35
1106	MW-106	1114638.45
1107	MW-107	1115424.61
1108	MW-108	1116953.35
1109	MW-109	1116915.03
1110	MW-110	1116809.60
1111	MW-111	1116309.14
1112	MW-112	1114637.79
1113	MW-113	1116317.34
1114	MW-114	1114818.18
1115	MW-115	1117655.08
1116	MW-116	1117841.60
1117	MW-117	1115996.30
1118	MW-118	1115992.30
1119	MW-119	1115332.60
1120	MW-120	1115332.20
1121	MW-121	1116298.75
1122	MW-122	1116318.75
1123	MW-123	1115854.50
1124	MW-124	1114089.30
1125	MW-125	1117654.90
1126	MW-126	1114637.23
1127	MW-127	1116081.20
1128	MW-128	1116056.40
1129	MW-129	1116237.90
1130	MW-130	1115935.80
1131	MW-131	1116615.30
1132	MW-132	1116352.70
1133	MW-133	1116222.70
1134	MW-134	1115934.00
1135	MW-135	1116875.10
1136	MW-136	1117550.00
1137	MW-137	1117532.70
1138	MW-138	1117533.30
1139	MW-139	1117541.10
1140	MW-140	1117540.00
1141	MW-141	1116972.80
1142	MW-142	1116968.10
1143	MW-143	1116889.30
1144	MW-144	1116932.10
1145	MW-145	1116889.40
1146	MW-146	1116296.20
1147	MW-147	1116298.90
1148	MW-148	1116292.10
1149	MW-149	1116301.40

Footnotes on Pa

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TALLEVAST, FLORIDA

Sort Number or Map Number	Location	Northing	Easting	Zone	Type	TOS
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Sort Number or Map Number	Location	Northing	Easting	Zone	Type	TOS (ft bgs)	BOS (ft bgs)	TD of Investigation (ft bgs)	Approx. Well Depth (ft btoc or bgs)	Installation Date	GS Elevation (ft amsl)	Top of Inner Casing (ft amsl)	Usage	Active
1195	MW-195	1117421.70	483147.10	Lower AF Sands	MW	280	300	300		2/20/2006	22.25	22.08	Monitoring	Current
1196	MW-196	1118775.20	479461.70	AF Gravels	MW	90	100	100		3/7/2006	27.15	26.67	Monitoring	Current
1197	MW-197	1120223.80	479487.40	AF Gravels	MW	106	116	116		3/8/2006	29.34	28.99	Monitoring	Current
1198	MW-198	1116350.70	483906.60	USAS	MW	11	16	16		3/6/2006	20.81	20.55	Monitoring	Current
1199	MW-199	1116357.60	483906.70	LSAS	MW	30	35	35		3/6/2006	20.74	20.42	Monitoring	Current
1200	MW-200	1116364.60	483906.70	AF Gravels	MW	90	100	100		3/5/2006	20.80	20.62	Monitoring	Current
1201	MW-201	1116371.10	483907.00	S&P Sands	MW	150	160	160		3/4/2006	20.80	20.54	Monitoring	Current
1202	MW-202	1116377.20	483907.40	Lower AF Sands	MW	280	300	300		3/3/2006	20.83	20.62	Monitoring	Current
1203	MW-203	1116352.10	481686.50	Floridan	MW	390	410	420	410	3/8/2006	25.30	27.2		

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TALLEVAST, FLORIDA

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170.1	CPT-1	1115990.95	479771.74	USAS	TSL					Temporary	Former	ChemOx Pilot Study Area
170.2	CPT-2	1116090.44	479775.93	USAS	TSL					Temporary	Former	Building 5 patio area
170.3	CPT-3	1116147.21	479659.25	USAS	TSL					Temporary	Former	Building 1 area
170.4	CPT-4	1115990.17	479679.04	USAS	TSL					Temporary	Former	Building 2 area
170.5	CPT-1S	1115630.15	480744.19	USAS	TSL					Temporary	Former	East of facility
170.6	CPT-2S	1115602.92	480747.66	USAS	TSL					Temporary	Former	East of facility
216	GT-D-1	1115119.87	479084.47	Clay/Sand Zone 3	TSL	178	12/3/2007	27.76		Temporary	Former	
217	GT-D-2	1116354.43	479406.33	Clay/Sand Zone 3	TSL	180	12/10/2007	30.74		Temporary	Former	MW-48 area
218	GT-D-3	1116545.37	479720.33	Clay/Sand Zone 3	TSL	175	12/13/2007	31.16		Temporary	Former	MW-13 cluster
219	GT-D-4	1116057.95	479806.98	Clay/Sand Zone 3	TSL	178	11/12/2007	32.11		Temporary	Former	Building 5 patio area
220	GT-D-5	1115725.95	480608.25	Clay/Sand Zone 3	TSL	175	12/13/2007	24.42		Temporary	Former	MW-27 cluster
221	GT-D-6	1116311.14	481338.08	Clay/Sand Zone 3	TSL	178	11/28/2007	26.73		Temporary	Former	MW-146 cluster
222	GT-S-7	1115380.71	479693.43	LSAS	TSL	48	12/4/2007	30.98		Temporary	Former	MW-233 area
223	GT-S-8	1115932.60	479389.48	LSAS	TSL	37	11/15/2007	30.99		Temporary	Former	MW-57 area
224	GT-S-9	1116333.42	480096.49	LSAS	TSL	38	12/3/2007	30.42		Temporary	Former	MW-17 area
225	GT-S-10	1116199.87	480582.60	LSAS	TSL	39	12/14/2007	27.62		Temporary	Former	MW-18 area
282	Lower LSAS boring near IW-1	1115948.75	479823.06	LSAS	TSL	53	3/13/2008	31.25		Temporary	Former	USAS Tracer Study Area
283	Lower LSAS boring near PZ-LSAS-3	1116021.85	479713.44	LSAS	TSL	53	3/14/2008	31.93		Temporary	Former	EXL-1 area
284	Lower LSAS boring near TL-INJ	1115967.18	479765.93	LSAS	TSL	55	3/13/2008	31.48		Temporary	Former	MW-32 area
300	MIP-1	1116117.01	479781.82	USAS	TSL	28.75	11/12/2007	32.99		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
301	MIP-2	1116101.04	479765.52	USAS	TSL	28.75	11/12/2007	32.83		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
302	MIP-3	1116088.37	479812.57	USAS	TSL	28.45	11/12/2007	32.00		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
303	MIP-4	1116118.97	479762.56	USAS	TSL	28.45	11/13/2007	33.00		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
304	MIP-5	1116117.51	479815.60	USAS	TSL	27.55	11/13/2007	32.19		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
305	MIP-6	1116089.69	479784.64	USAS	TSL	28.55	11/13/2007	32.75		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
306	MIP-7	1116065.39	479813.14	USAS	TSL	28.05	11/14/2007	32.16		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
307	MIP-8	1116065.65	479784.26	USAS	TSL	28.55	11/14/2007	32.58		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
308	MIP-9	1116066.11	479763.20	USAS	TSL	28.25	11/14/2007	32.76		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
309	MIP-10	1116088.36	479841.94	USAS	TSL	27.95	11/14/2007	32.05		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
310	MIP-11	1116064.63	479838.73	USAS	TSL	28.05	11/14/2007	32.11		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
311	MIP-12	1116039.57	479807.92	USAS	TSL	28.25	11/15/2007	31.84		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
312	MIP-13	1116040.46	479783.48	USAS	TSL	28.35	11/15/2007	31.94		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
313	MIP-14	1116041.10	479761.94	USAS	TSL	28.25	11/15/2007	32.01		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
314	MIP-15	1116040.23	479838.93	USAS	TSL	28.05	11/15/2007	31.75		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
315	MIP-16	1116149.57	479780.83	USAS	TSL	27.55	11/15/2007	32.62		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
316	MIP-17	1116150.70	479806.22	USAS	TSL	28.25	11/19/2007	32.67		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
317	MIP-18	1116014.37	479807.21	USAS	TSL	28.75	11/19/2007	31.71		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
318	MIP-19	1116014.68	479781.83	USAS	TSL	29.45	11/19/2007	31.83		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
319	MIP-20	1116013.38	479837.32	USAS	TSL	28.55	11/19/2007	31.55		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
320	MIP-21	1115989.52	479806.67	USAS	TSL	29.75	11/19/2007	31.66		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
321	MIP-22	1115989.69	479781.57	USAS	TSL	31.15	11/19/2007	31.63		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
322	MIP-23	1116015.66	479756.63	USAS	TSL	31.05	11/20/2007	31.87		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
323	MIP-24	1115990.42	479757.08	USAS	TSL	31.65	11/20/2007	31.63		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
324	MIP-25	1115964.34	479757.09	USAS	TSL	31.05	11/20/2007	31.46		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
325	MIP-26	1115963.92	479781.09	USAS	TSL	31.45	11/20/2007	31.42		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)
326	MIP-27	1115963.90	479807.08	USAS	TSL	29.45	11/20/2007	31.40		Temporary	Former	MIP Area A (Lockheed Martiin Tallevast Facility)

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TALLEVAST, FLORIDA

Sort Number or Map Number	Location	Northing	Easting	Zone	Type	TD of Investigation (ft bgs)	Installation Date	GS Elevation (ft amsl)	Top of Inner Casing (ft amsl)	Usage	Active	Notes
327	MIP-28	1115964.40	479838.00	USAS	TSL							

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373	MIP-74	1115966.17	479686.43	USAS	TSL	28.25	12/6/2007	31.4		Temporary	Former	MIP Area A (Lockheed Martin Tallevast Facility) 1115966.17

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419	MIP-7W	1115653.45	480709.37	USAS	TSL	34.75	12/14/2007	27.1		Temporary	Former	MIP Area B (Southeast of Facility)
420	MIP-8W	1115646.11	480659.20	USAS	TSL	34.95	12/14/2007	27.2		Temporary	Former	MIP Area B (Southeast of Facility)
421	MIP-9W	1115601.40	480662.89	USAS	TSL	35.85	12/14/2007	27.3		Temporary	Former	MIP Area B (Southeast of Facility)
422	MIP-10W	1115691.86	480651.89	USAS	TSL	34.65	1/3/2008	27.6		Temporary	Former	MIP Area B (Southeast of Facility)
423	MIP-11W	1115603.69	480704.46	USAS	TSL	37.25	1/3/2008	26.8		Temporary	Former	MIP Area B (Southeast of Facility)
424	MIP-12W	1115717.71	480549.45	USAS	TSL	35.25	1/4/2008	27.9		Temporary	Former	MIP Area B (Southeast of Facility)
425	MIP-13W	1115729.52	480525.36	USAS	TSL	34.65	1/4/2008	28.1		Temporary	Former	MIP Area B (Southeast of Facility)
426	MIP-14W	1115664.51	480555.92	USAS	TSL	35.35	1/4/2008	27.8		Temporary	Former	MIP Area B (Southeast of Facility)
427	MIP-15W	1115616.78	480601.85	USAS	TSL	35.45	1/4/2008	27.6		Temporary	Former	MIP Area B (Southeast of Facility)
428	MIP-16W	1115775.47	480603.35	USAS	TSL	34.05	1/7/2008	27.6		Temporary	Former	MIP Area B (Southeast of Facility)
429	MIP-17W	1115548.59	480670.36	USAS	TSL	34.75	1/7/2008	26.9		Temporary	Former	MIP Area B (Southeast of Facility)
430	MIP-18W	1115554.48	480708.40	USAS	TSL	35.25	1/7/2008	26.9		Temporary	Former	MIP Area B (Southeast of Facility)
431	MIP-19W	1115767.09	480556.96	USAS	TSL	33.85	1/7/2008	27.9		Temporary	Former	MIP Area B (Southeast of Facility)
432	MIP-20W	1115668.37	480654.59	USAS	TSL	35.15	1/7/2008	27.8		Temporary	Former	MIP Area B (Southeast of Facility)
433	MIP-21W	1115648.16	480685.34	USAS	TSL	34.95	1/8/2008	27.0		Temporary	Former	MIP Area B (Southeast of Facility)
434	MIP-22W	1115619.89	480660.08	USAS	TSL	35.45	1/8/2008	27.2		Temporary	Former	MIP Area B (Southeast of Facility)
435	MIP-23W	1115637.44	480636.04	USAS	TSL	35.35	1/10/2008	27.5		Temporary	Former	MIP Area B (Southeast of Facility)
436	MIP-24W	1115682.01	480712.54	USAS	TSL	34.45	1/10/2008	27.2		Temporary	Former	MIP Area B (Southeast of Facility)
437	MIP-25W	1115628.27	480707.49	USAS	TSL	35.85	1/10/2008	27.3		Temporary	Former	MIP Area B (Southeast of Facility)
438	MIP-26W	1115624.13	480679.42	USAS	TSL	35.55	1/10/2008	26.8		Temporary	Former	MIP Area B (Southeast of Facility)
439	MIP-27W	1115587.86	480682.65	USAS	TSL	35.95	1/10/2008	27.4		Temporary	Former	MIP Area B (Southeast of Facility)
440	MIP-28W	1115945.88	480481.15	USAS	TSL	31.15	1/16/2008	28.2		Temporary	Former	MIP Area B (Southeast of Facility)
441	MIP-29W	1115947.20	480452.45	USAS	TSL	31.75	1/16/2008	28.3		Temporary	Former	MIP Area B (Southeast of Facility)
442	MIP-30W	1115751.60	480595.70	USAS	TSL	34.15	1/16/2008	27.4		Temporary	Former	MIP Area B (Southeast of Facility)
443	MIP-31W	1115722.01	480651.25	USAS	TSL	34.15	1/16/2008	27.7		Temporary	Former	MIP Area B (Southeast of Facility)
500	MIP-1S	1115646.88	480738.76	USAS	TSL	34.35	2/18/2008	26.97		Temporary	Former	MIP Area B (Southeast of Facility)
501	MIP-2S	1115577.23	480738.25	USAS	TSL	27.45	2/18/2008	26.99		Temporary	Former	MIP Area B (Southeast of Facility)
502	MIP-3S	1115700.08	480738.77	USAS	TSL	33.75	2/18/2008	26.87		Temporary	Former	MIP Area B (Southeast of Facility)
503	MIP-4S	1115705.63	480790.58	USAS	TSL	34.55	2/18/2008	26.45		Temporary	Former	MIP Area B (Southeast of Facility)
504	MIP-5S	1115651.64	480797.00	USAS	TSL	33.05	2/19/2008	26.17		Temporary	Former	MIP Area B (Southeast of Facility)
505	MIP-6S	1115594.70	480800.87	USAS	TSL	33.85	2/19/2008	26.35		Temporary	Former	MIP Area B (Southeast of Facility)
506	MIP-7S	1115551.40	480737.43	USAS	TSL	28.75	2/20/2008	26.99		Temporary	Former	MIP Area B (Southeast of Facility)
507	MIP-8S	1115717.45	480738.19	USAS	TSL	33.75	2/20/2008	26.73		Temporary	Former	MIP Area B (Southeast of Facility)
508	MIP-9S	1115650.47	480821.27	USAS	TSL	33.25	2/20/2008	26.14		Temporary	Former	MIP Area B (Southeast of Facility)
509	MIP-10S	1115674.90	480798.66	USAS	TSL	33.55	2/20/2008	26.15		Temporary	Former	MIP Area B (Southeast of Facility)
510	MIP-11S	1115551.50	480763.72	USAS	TSL	34.65	2/21/2008	26.69		Temporary	Former	MIP Area B (Southeast of Facility)
511	MIP-12S	1115526.63	480737.16	USAS	TSL	38.15	2/21/2008	27.15		Temporary	Former	MIP Area B (Southeast of Facility)
512	MIP-13S	1115525.86	480765.75	USAS	TSL	34.95	2/21/2008	26.70		Temporary	Former	MIP Area B (Southeast of Facility)
513	MIP-14S	1115501.43	480799.48	USAS	TSL	34.95	2/21/2008	26.37		Temporary	Former	MIP Area B (Southeast of Facility)
514	MIP-15S	1115500.65	480764.28	USAS	TSL	34.05	2/26/2008	26.51		Temporary	Former	MIP Area B (Southeast of Facility)
515	MIP-16S	1115500.50	480737.51	USAS	TSL	33.35	2/28/2008	26.76		Temporary	Former	MIP Area B (Southeast of Facility)
516	MIP-17S	1115522.79	480801.05	USAS	TSL	33.35	2/28/2008	26.30		Temporary	Former	MIP Area B (Southeast of Facility)
516	MIP-17th Street	NS	NS	USAS	TSL	24.85	2/28/2008	NS		Temporary	Former	MIP Area C (South of Facility)
	MIP-ANT	NS	NS	USAS	TSL	32.35	2/25/2008	NS		Temporary	Former	MIP Area C (South of Facility)
1466	SD-01	1116705.00	481570.70	USAS	TSL	2.3	11/8 & 12/07	23.1		Temporary	Former	Pond TW-6 - East
1467	SD-02	1116704.00	481631.10	USAS	TSL	2.4	11/8 & 12/07	23.4		Temporary	Former	Pond TW-6 - West

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TABLE 4-1
OTHER INVESTIGATION LOCATION INFORMATION

TABLE 4-2
 SYNTHETIC PRECIPITATION LEACHING PROCEDURE
 RESULTS FOR SOIL SAMPLES HA-006 AND HA-007

REMEDIAL ACTION PLAN ADDENDUM
 LOCKHEED MARTIN TALLEVAST SITE
 TALLEVAST, FLORIDA

Parameter	Sample	SPLP Result (µg/L)	GCTL (µg/L)
Be	HA-006	0.74 U	4
	HA-007	2.2 I	
Cr	HA-006	8.5 U	100
	HA-007	8.5 U	

Notes:

- U = Parameter is not detected.
- I = Value is reported between the MDL and PQL.
- MDL = Method detection limit
- PQL = Practical quantitation limit
- Be = Beryllium
- Cr = Chromium
- µg/L = Micrograms per liter
- GCTL= Groundwater Cleanup Target Level
- SPLP = Synthetic precipitation leaching procedure

TABLE 4-3
LONG-TERM MONITORING TRANSDUCER LOCATIONS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA



TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units	EXC-11 4 09/28/01 EXC-11-4	EXC-12 4 09/28/01 EXC-12-4	EXC-13 5 09/28/01 EXC-13-5	EXC-14 5 09/28/01 EXC-14-5	FABC-SB01 4 08/20/97 FABC-SB01-4	FABC-SB02 5 08/19/97 FABC-SB02-5	FABC-SB03 4 08/19/97 FABC-SB03-4	FABC-SB04 4 08/19/97 FABC-SB04-4	FABC-SB05 4 08/20/97 FABC-SB05-4
PAHs - Benzo(a)pyrene Equivalents													
Total B(a)P Equivalents	--	100	700	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics													
Tetrachloroethene	30	8,800	18,000	ug/kg	NA	NA	NA	NA	5 U	5 U	5 U	5 U	5 U
Volatile Organics (8260B)													
Tetrachloroethene	30	8,800	18,000	ug/kg	NA	NA	NA	6.3 U	NA	NA	NA	NA	NA
Petroleum Products (FL-PRO)													
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg	6,000 U	5,700 U	36,000	6,300 U	NA	NA	NA	NA	NA
Petroleum Products (LGCYPET)													
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Arsenic	--	2,100	12,000	ug/kg	NA	NA	NA	NA	1,000 U	NA	1,000 U	1,000 U	1,000 U
Beryllium	63,000	120,000	1,400,000	ug/kg	8,100	NA	1,200 U	NA	200 U	NA	200 U	200 U	200 U
Chromium	38,000	210,000	470,000	ug/kg	5,400	NA	1,700	NA	1,000	NA	7,000	4,000	3,000
Copper	--	150,000	89,000,000	ug/kg	NA	NA	NA	NA	2,000 U	NA	2,000 U	2,000 U	2,000 U

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TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID:	
Sample Depth (ft):	
Date Collected:	
Sample Name:	

PAHs - Benzo(a)pyrene Equivalents				
Total B(a)P Equivalents	--	100	700	ug/kg
Volatile Organics				

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units	HA-001 1 - 2 11/10/04 HA001L-24	HA-002 0 - 0.5 11/10/04 HA002L-06	HA-002 0.5 - 1 11/10/04 HA002L-12	HA-002 1 - 2 11/10/04 HA002L-24	HA-003 0 - 0.5 11/10/04 HA003L-06	HA-003 0.5 - 1 11/10/04 HA003L-12	HA-003 1 - 2 11/10/04 HA003L-24	HA-00 4 0 - 0.5 11/11/04 HA004L-06	HA-004 0.5 - 1 11/11/04 HA004L-12
PAHs - Benzo(a)pyrene Equivalents													
Total B(a)P Equivalents	--	100	700	ug/kg	NA	935.15	250.24	NA	NA	NA	NA	571.33	NA
Volatile Organics													
Tetrachloroethene	30	8,800	18,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (8260B)													
Tetrachloroethene	30	8,800	18,000	ug/kg	5.1 U	5.2 U	4.6 U	5.6 U	5.8 U	4.9 U	6.5 U	4.9 U	5.2 U
Petroleum Products (FL-PRO)													
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg	22,000 U	23,000 U	21,000 U	22,000 U	24,000 U	22,000 U	27,000 U	22,000 U	22,000 U
Petroleum Products (LGCYPET)													
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Arsenic	--	2,100	12,000	ug/kg	540 U	850	530 U	560 U	1,300	650	680 U	760	550 U
Beryllium	63,000	120,000	1,400,000	ug/kg	1,100 U	2,700	1,100 U	1,100 U	2,500	1,100 U	1,400 U	1,100 U	1,100 U
Chromium	38,000	210,000	470,000	ug/kg	4,500	18,000	2,700	3,400	14,000	5,400	1,900	3,500	1,100 U
Copper	--	150,000	89,000,000	ug/kg	5,600	68,000	5,100	6,700	45,000	15,000	3,900	1,100 U	1,600

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TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID:	Sample Depth (ft):	Date Collected:	Sample Name:				
PAHs - Benzo(a)pyrene Equivalents							
Total B(a)P Equivalents	--	100	700	ug/kg			
Volatile Organics							
Tetrachloroethene	30	8,800	18,000	ug/kg			
Volatile Organics (8260B)							
Tetrachloroethene	30	8,800	18,000	ug/kg			
Petroleum Products (FL-PRO)							
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg			
Petroleum Products (LGCYPET)							
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg			
Metals							

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units	HA-007 1 - 2 11/09/04 HA007L-24	HA-008 0 - 0.5 11/12/04 HA008L-06	HA-008 0.5 - 1 11/12/04 HA008L-12	HA-008 1 - 2 11/12/04 HA008L-24	HA-009 0 - 0.5 11/10/04 HA009L-06	HA-009 0.5 - 1 11/10/04 HA009L-12	HA-009 1 - 2 11/10/04 HA009L-24	HA-010 0 - 0.5 11/10/04 HA010L-06	HA-010 0.5 - 1 11/10/04 HA010L-12
PAHs - Benzo(a)pyrene Equivalents													
Total B(a)P Equivalents	--	100	700	ug/kg	NA	297.08	NA	NA	251.24	NA	NA	775.59	NA
Volatile Organics													
Tetrachloroethene	30	8,800	18,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (8260B)													
Tetrachloroethene	30	8,800	18,000	ug/kg	4.9 U	4.6 U	5.3 U	5 U	5.7 U	4.3 U	5.5 U	5.1 U	5 U
Petroleum Products (FL-PRO)													
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg	21,000 U	21,000 U	21,000 U	22,000 U	36,000	22,000	22,000 U	27,000	47,000
Petroleum Products (LGCYPET)													
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Arsenic	--	2,100	12,000	ug/kg	530 U	530 U	530 U	540 U	520 U	530 U	550 U	530 U	630
Beryllium	63,000	120,000	1,400,000	ug/kg	88,000	1,100 U	1,100 U	1,100 U	1,000 U	1,100 U	1,100 U	1,100 U	1,100 U
Chromium	38,000	210,000	470,000	ug/kg	5,500	1,100 U	1,700	1,100 U	1,000 U	1,500	1,100 U	1,200	2,300
Copper	--	150,000	89,000,000	ug/kg	610,000	5,300 U	5,300 U	5,400 U	1,100	6,800	1,100 U	1,100 U	9,600

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TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units
PAHs - Benzo(a)pyrene Equivalents				
Total B(a)P Equivalents	--	100	700	ug/kg
Volatile Organics				
Tetrachloroethene	30	8,800	18,000	ug/kg
Volatile Organics (8260B)				
Tetrachloroethene	30	8,800	18,000	ug/kg
Petroleum Products (FL-PRO)				
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg
Petroleum Products (LGCYPET)				
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg
Metals				
Arsenic	--	2,100	12,000	ug/kg
Beryllium	63,000	120,000	1,400,000	ug/kg
Chromium	38,000	210,000	470,000	ug/kg
Copper	--	150,000	89,000,000	ug/kg

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID:	Sample Depth (ft):	Date Collected:	Sample Name:		
PAHs - Benzo(a)pyrene Equivalents					
Total B(a)P Equivalents	--	100	700	ug/kg	
Volatile Organics					
Tetrachloroethene	30	8,800	18,000	ug/kg	
Volatile Organics (8260B)					
Tetrachloroethene	30	8,800	18,000	ug/kg	
Petroleum Products (FL-PRO)					
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg	
Petroleum Products (LGCYPET)					
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg	
Metals					
Arsenic	--	2,100	12,000	ug/kg	
Beryllium	63,000	120,000	1,400,000	ug/kg	

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units	HA-016	HA-142	HA-142	HA-14 4
PAHs - Benzo(a)pyrene Equivalents								
Total B(a)P Equivalents	--	100	700	ug/kg				
Volatile Organics								
Tetrachloroethene	30	8,800	18,000	ug/kg				
Volatile Organics (8260B)								
Tetrachloroethene	30	8,800	18,000	ug/kg				
Petroleum Products (FL-PRO)								
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg				
Petroleum Products (LGCYPET)								
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg				
Metals								
Arsenic	--	2,100	12,000	ug/kg				
Beryllium	63,000	120,000	1,400,000	ug/kg				
Chromium	38,000	210,000	470,000	ug/kg				
Copper	--	150,000	89,000,000	ug/kg				

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units	LMC-BLDG3C 0 - 1 02/04/09 LMC-BLDG3C (0'-1) - 020409	SB-01 0.25 01/31/01 TT-SB-01-3	SB-01 0.5 01/31/01 TT-SB-01-6	SB-02 0.25 01/31/01 TT-SB-02-3	SB-02 0.5 01/31/01 TT-SB-02-6	SB-05 0.25 02/01/01 TT-SB-05-3	SB-05 0.5 02/01/01 TT-SB-05-6
PAHs - Benzo(a)pyrene Equivalents											
Total B(a)P Equivalents	--	100	700	ug/kg	NA	NA	NA	NA	NA	NA	NA
Volatile Organics											
Tetrachloroethene	30	8,800	18,000	ug/kg	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (8260B)											
Tetrachloroethene	30	8,800	18,000	ug/kg	3.1 U	6.7 U	6.6 U	8.2 U	5.5 U	8.7 U	6.1 U
Petroleum Products (FL-PRO)											
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg	NA	18,000	2,000,000	5,200 U	5,700 U	5,400 U	5,600 U
Petroleum Products (LGCYPET)											
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg	15,000 J	NA	NA	NA	NA	NA	NA
Metals											
Arsenic	--	2,100	12,000	ug/kg	NA	NA	NA	NA	NA	NA	NA
Beryllium	63,000	120,000	1,400,000	ug/kg	NA	1,000 U	1,200 U	1,000 U	1,100 U	180,000	6,900
Chromium	38,000	210,000	470,000	ug/kg	NA	1,000 U	12,000	1,000 U	9,900	46,000	21,000
Copper	--	150,000	89,000,000	ug/kg	NA	NA	NA	NA	NA	NA	NA

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TABLE 7-1

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
REMEDIAL ACTION PLAN ADDENDUM

TABLE 7-1

TABLE 7-1

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units	SP-10 0.5 - 2 08/08/08 SP-10 (0.5-2')	SP-11 0 - 0.5 08/08/08 SP-11 (0-0.5')	SP-11 0.5 - 2 08/08/08 SP-11 (0.5-2')	SP-12 0 - 0.5 08/18/08 SP - 12R (0 - 0.5')	SP-12 0.5 - 2 08/18/08 SP - 12R (0.5 - 2')	SP-13 0 - 0.5 08/15/08 SP-13(0-6)"	SP-13 0.5 - 2 08/15/08 SP-13(6-24)"	SP-14 0 - 0.5 08/15/08 SP-14 (0-6)"
- Benzo(a)pyrene Equivalents					NA	NA	NA	NA	NA	NA	NA	NA
B(a)P Equivalents					NA	NA	NA	NA	NA	NA	NA	NA
e Organics					NA	NA	NA	NA	NA	NA	NA	NA
chloroethene					NA	NA	NA	NA	NA	NA	NA	NA
e Organics (8260B)					3.3 UJ	3 UJ	60 UJ	3.1 U	3.1 U	3.3 U	4.4 U	3.5 U
chloroethene					NA	NA	NA	NA	NA	NA	NA	NA
eum Products (FL-PRO)					NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons					NA	NA	NA	NA	NA	NA	NA	NA
eum Products (LGCYPET)					NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons (C8-C40)					NA	NA	NA	NA	NA	NA	NA	NA
s					NA	NA	NA	NA	NA	NA	NA	NA
ic					NA	NA	NA	NA	NA	NA	NA	NA
um					NA	NA	NA	NA	NA	NA	NA	NA
nium					NA	NA	NA	NA	NA	NA	NA	NA
er					NA	NA	NA	NA	NA	NA	NA	NA

Footnotes on Page 20.

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units
PAHs - Benzo(a)pyrene Equivalents				
Total B(a)P Equivalents	--	100	700	ug/kg
Volatile Organics				
Tetrachloroethene	30	8,800	18,000	ug/kg
Volatile Organics (8260B)				
Tetrachloroethene	30	8,800	18,000	ug/kg
Petroleum Products (FL-PRO)				
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg
Petroleum Products (LGCYPET)				
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg
Metals				
Arsenic	--	2,100	12,000	ug/kg
Beryllium	63,000	120,000	1,400,000	ug/kg
Chromium	38,000	210,000	470,000	ug/kg
Copper	--	150,000	89,000,000	ug/kg

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

ID: (ft): ated: me:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units
	--	100	700	ug/kg
	30	8,800	18,000	ug/kg
	30	8,800	18,000	ug/kg
	340,000	460,000	2,700,000	ug/kg
	340,000	460,000	2,700,000	ug/kg
	--	2,100	12,000	ug/kg
	63,000	120,000	1,400,000	ug/kg
	38,000	210,000	470,000	ug/kg
	--	150,000	89,000,000	ug/kg

TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

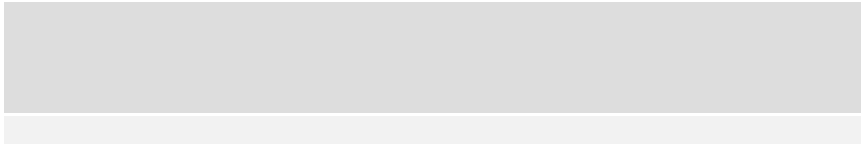


TABLE 7-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Location ID: Sample Depth (ft): Date Collected: Sample Name:	GW Leachability SCTLs	Residential SCTLs	Industrial SCTLs	Units	SP-26 0.5 - 2 08/27/08 SP-26 (0.5-2)	SP-27 0 - 0.5 08/27/08 SP-27 (0-0.5)	SP-27 0.5 - 2 08/27/08 SP-27 (0.5-2)	SP-28 0 - 0.5 08/27/08 SP-28 (0-0.5)	SP-28 0.5 - 2 08/27/08 SP-28 (0.5-2)	SP-29 0 - 0.5 09/03/08 SP-29 (0'-0.5')	SP-29 0.5 - 2 09/03/08 SP-29 (0.5'-2')	SP-30 0 - 0.5 09/03/08 SP-30 (0'-0.5')	SP-30 0.5 - 2 09/03/08 SP-30 (0.5'-2')
PAHs - Benzo(a)pyrene Equivalents													
Total B(a)P Equivalents	--	100	700	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics													
Tetrachloroethene	30	8,800	18,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics (8260B)													
Tetrachloroethene	30	8,800	18,000	ug/kg	3.2 U	3.1 U	3.4 U	2.9 U	3.3 U	3.7 U	3.1 U	3.1 U	3.3 U
Petroleum Products (FL-PRO)													
Total Petroleum Hydrocarbons	340,000	460,000	2,700,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Products (LGCYPET)													
Total Petroleum Hydrocarbons (C8-C40)	340,000	460,000	2,700,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Arsenic	--	2,100	12,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	63,000	120,000	1,400,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	38,000	210,000	470,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	--	150,000	89,000,000	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA

Footnotes:

I = Detected but below reporting limit. Result is an estimated concentration.

U = The analyte was analyzed for, but not detected.

J = Estimated value.

UJ = The analyte was analyzed for, but not detected. The reporting limit is an estimated value.

Shade = Exceeding the GW Leachability SCTLs

Bold = Exceeding the Residential SCTLs

Italics = Exceeding the Industrial SCTLs

SCTL = Soil cleanup target level.

GW = Groundwater.

NA = Not analyzed.

ug/kg = Micrograms per kilogram.

PAH = Polycyclic aromatic hydrocarbon.

ft = Feet.

TABLE 8-2
SUMMARY OF REMEDIAL TECHNOLOGY AND PROCESS OPTION ESTIMATED COSTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

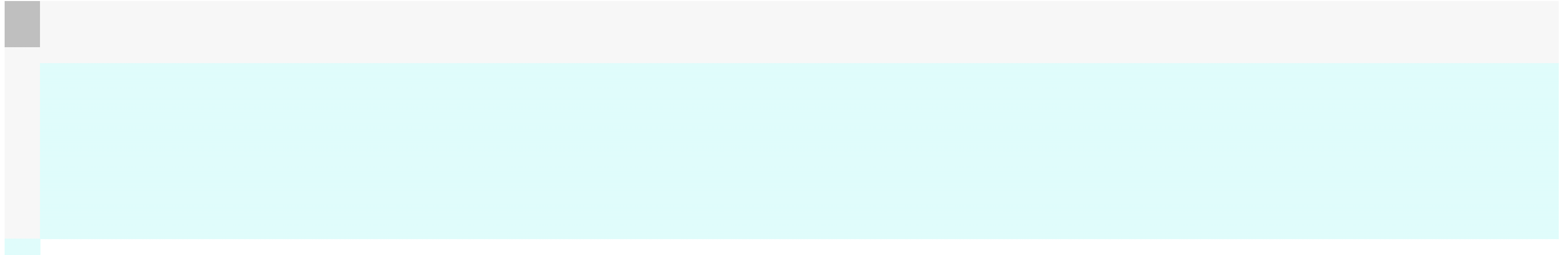


TABLE 9-1
PROPOSED REMEDIAL ACTION ALTERNATIVE EXTRACTION AND RECHARGE SYSTEM

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Extraction Wells and Trenches

Unit	Number of Extraction Wells and Trenches	Extraction Rate (gpm)
	4 trenches	
USAS	37 (5 from IRA)	145
LSAS	27 (5 from IRA)	30
AF Gravels	11	17
S&P Sands	2	4
Total	77 wells (10 from IRA)	196

Injection Wells

Unit	Number of Injection Wells	Injection Rate (gpm)
USAS	5	10

Recharge Galleries

Designation	Infiltration Rate (gpm)
TW-6	34
TL-1	10
TW-18	4
Total	48

Notes:

- gpm - gallons per minute
- Extraction Rate - Total for all remediation systems, including IRA extraction wells.
- IRA - Interim Remedial Action
- AF Gravels = Arcadia Formation Gravels
- LSAS = Lower Shallow Aquifer System
- S&P Sands = Salt & Pepper Sands
- USAS = Upper Surficial Aquifer System

TABLE 9-2
SUMMARY OF MODEL-PREDICTED TIMES TO ACHIEVE GCTLs
FOLLOWING REMEDIAL ACTION PLAN SYSTEM STARTUP

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Compound	GCTL (ug/L)	Unit	Entire Model	On Facility	Golf Course	Off Facility	
		USAS	31	22	9	31	
		LSAS	26	26	21	23	
		AF Gravels	19	19	7	14	
		S&P Sands	23	23	1	8	
		USAS	25	8	10	25	
		LSAS	48	48	47	48	
		AF Gravels	39	38	39	26	
		S&P Sands	37	37	12	34	

Notes:

- AF Gravels = Arcadia Formation Gravels
- GCTL- Groundwater Cleanup Target Level
- LSAS = Lower Shallow Aquifer System
- S&P Sands = Salt & Pepper Sands
- TCE = Trichloroethene
- USAS = Upper Surfioower Sh11er System USAS = UpF

TABLE 10-1

TABLE 10-2A
PHOTO-CAT RATE CONSTANT
REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Date	Flow Rate (gpm)	TCE Influent (ppb)	TCE Mid-Process (ppb)	Power (kW)	Percent Removal (%)	TCE Rate Constant
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TABLE 10-2B
PHOTO-CAT POWER REQUIREMENTS

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

Estimated Flow Rate (gpm)	Estimated Rate Constant (Lpm/kW)	Estimated 1,1-DCA Influent Concentration (ppb)	Desired 1,1-DCA Effluent Concentration (ppb)	Power Requirement (kW)
100	3.09	40	70	NA
200	3.09	40	70	NA
300	3.09	40	70	NA

Estimated Flow Rate (gpm)	Estimated Rate Constant (Lpm/kW)	Estimated TCE Influent Concentration (ppb)	Desired TCE Effluent Concentration (ppb)	Power Requirement (kW)

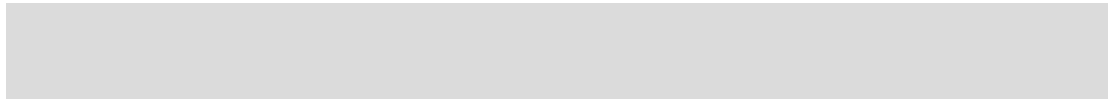


TABLE 10-2C
 PHOTO-CAT 1,1-DICHLOROETHANE REMOVAL

REMEDIAL ACTION PLAN ADDENDUM
 LOCKHEED MARTIN TALLEVAST SITE
 TALLEVAST, FLORIDA

Estimated Flow Rate (gpm)	Estimated Rate Constant (Lpm/kW)	Power (kW)	Estimated 1,1-DCA Influent Concentration (ppb)	Calculated 1,1-DCA Effluent Concentration (ppb)
100	3.09	365	40	2.03
200	3.09	365	40	9.02
300	3.09	365	40	14.81
100	3.09	243	40	5.50
200	3.09	243	40	14.83
300	3.09	243	40	20.65

Footnotes :

1,1-DCA = 1,1-Dichloroethane
 gpm = Gallons per minute
 kW = Kilowatts
 Lpm/kW = Liters per minute/kilowatt
 ppb = Parts per billion
 Base Equation from Section 10.2.2.3

TABLE 10-3
EFFLUENT LIMITATIONS FOR MCUO IUD PERMIT #IW 0025S

REMEDIAL ACTION PLAN ADDENDUM

TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM						
PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
	FE/FIT-100	Totalizing flow meter with indicating transmitter	1. Flow = 150 gpm - low flow	1	Data will be used to operate Sodium Hydroxide Metering Pump (P-700A) if low flow condition is detected, P-700A shall not operate.	

TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
Secondary Settling Tanks (T-140A/B)	LS-140A-1	Level Switch	1. 48 inches - low / low level	14	Alarm - Notify Operator.	
	LS-140B-1				Disable solids transfer pumps (P-140A/B)	
	LS-140A-2	Level Switch	1. 80 inches - high level	16	Critical Alarm - Notify Operator.	
	LS-140B-2				Extraction well system shut down.	
	LE/LIT-140A-3	Level Transmitter	1. 60 inches - low level	14	1. Alarm - Notify Operator; Disables solids transfer pumps (P-140A/B).	
	LE/LIT-140B-3		2. 76 inches - high level	15	2. Stop extraction well pumps.	
	LS-140A-4 LS-140B-4	Level Switch	3. 80 inches - high / high level	16	3. Critical alarm. Extraction well system shut down.	
			1. 80 inches - high / high / high level	16	1. Extraction well system shut down.	
Secondary Solids Transfer Pumps (P-140A/B)	HS-140A/B	HOA selector switch	1. Hand	NA	1. The pump shall operate regardless of the status of alarms and interlocks.	
			2. Auto		2. The pump shall be subject to control devices, interlocks and alarms.	
			3. Off		3. The pump shall not operate.	
	KC-140A/B	Timer control	Auto	NA	Pump shall operate 5 minutes per hour.	PLC programmable timer.
	YI-140A/B	Status Indicator	On/Off	NA	1. Indicates status of P-140A/B. A discord alarm will occur if P-140A/B is engaged to run and the return input from the auxiliary contact is not made.	
	PI/PS-140A/B	Pressure Switch	Manual set point	17	High pressure response:	
Filter Feed Tank (T-200)	LS-200-1	Level Switch	1. 24 inches - low / low level	18	1. Shuts down power to solids transfer pumps P-140A/B	
	LS-200-2	Level Switch	1. 60 inches - high level	21	Alarm - Notify Operator.	
					Disable P-200A/B/C and P-150A/B.	
	LE/LIT-200-3	Level Transmitter	1. 36 inches - low level	19	Critical Alarm - Notify Operator.	
			2. 48 inches - high level	20	Extraction well system shut down.	
		3. 60 inches - high / high level	21	1. Alarm - Notify Operator. Stop filter feed pumps P-200A/B/C and aerator recirculation pumps P-150A/B.	Run permissives to Extraction Wells for high and low shut downs. Run permissives for P-150A/B.	
	LS-200-4	Level Switch	1. 60 inches - high / high / high level	21	2. Start filter feed pumps P-200A/B/C.	
					3. Critical alarm. Extraction well system shut down.	
Filter Feed Pump (P-200A/B/C)	VFD-200A/B/C	Variable Flow Drive	PLC adjustable set point	NA	1. Extraction well system shut down	
					Critical Alarm - Notify Operator.	
					The purpose is to maintain a constant flow rate through the media filters (F-210A/B/C) and ultrafilters (F-230A/B/C), which will be measured by flow meters (FE/FIT-230A/B/C) on the ultrafilter effluent line.	Maintain P-200A/B/C flow rate higher than T-200 influent flow rate.
	HS-200A/B/C	HOA selector switch	1. Hand	NA	1. The pump shall operate regardless of the status of alarms and interlocks.	
			2. Auto		2. The pump shall be subject to control devices, interlocks and alarms.	
			3. Off		3. The pump shall not operate.	
	YI-200A/B/C	Status Indicator	On/Off	NA	1. Indicates status of P-200A/B/C. A discord alarm will occur if P-200A/B/C is engaged to run and the return input from the auxiliary contact is not made.	
					2. Notify operator.	
Double Mechanical Seal Flushing System (Pumps P-200A/B/C)	FI/FS-200A/B/C	Flow switch	PLC adjustable set point	22	Low flow response:	Flow switch monitors flow of seal water to the filter feed pumps.
					1. Alarm - notify operator.	
					2. Shut down pumps (P-200A/B/C).	
	PI/PCV-200A/B/C	On/Off	Manual set point		PCV-200A/B/C opens or closes depending on the pressure in the line. PCV-200A/B/C shall be energized/de-energized in conjunction with P-200A/B/C operation.	
	FV-200A/B/C	NA.	PLC adjustable set point		Flow Valve FV-200A/B/C opens or closes depending on the control device and alarms it is subject to. FV-200A/B/C shall be energized/de-energized in conjunction with pump P-200A/B/C operation.	The purpose is to control the flow of seal water to Pump P-200A/B/C.
Aerator Recirculation Pump (P-150A/B)	HS-150A/B	HOA selector switch	1. Hand		1. The pump shall operate regardless of the status of alarms and interlocks.	
			2. Auto		2. The pump shall be subject to control devices, interlocks and alarms.	
			3. Off		3. The pump shall not operate.	
	YI-150A/B	Status Indicator	On/Off		1. Indicates status of P-150A/B. A discord alarm will occur if P-150A/B is engaged to run and the return input from the auxiliary contact is not made.	
					2. Notify operator.	
	PI/PS-150A/B	Pressure Switch	Manual set point	23	High pressure response:	High pressure may indicate a plugged line or aerator. Notify operator that aerator maintenance is required.
					1. Notify operator.	
					2. Shuts down power to aerator recirculation pumps P-150A/B.	
Double Mechanical Seal Flushing System (Pumps P-150A/B)	FS-150A/B	Flow switch	PLC adjustable set point	24	Low flow response:	Flow switch monitors flow of seal water for the centrifugal pumps.
					1. Alarm - notify operator.	
					2. Shut down pumps (P-150A/B).	
	FV-150A/B	Flow Valve	On/Off		Flow Valve FV-150A/B opens or closes depending on the control device and alarms it is subject to. FV-150A/B shall be energized/de-energized in conjunction with pump P-150A and P-150B operation.	The purpose is to control the flow of seal water to Pump P-150A/B.
	PI/PCV-150A/B	Pressure Control Valve	NA.		PCV-150A/B opens or closes depending on the pressure in the line. PCV-150A/B shall be energized/de-energized in conjunction with P-150A and P-150B operation.	

TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
Sump Pump (P-1200)	LS-1200A/B/C	Level switch	1. xx inches - low level 2. xx inches - high level 3. xx inches - high / high level 4. xx inches - high / high / high level	25 26 27 28	1. Low level response - Sump Pump (P-1200) will turn off. 2. High level response - Sump Pump (P-1200) will turn on. 3. High High level response - Notify Operator - System shutdown. 4. High High High level response - Critical Alarm - System shutdown.	
	HS-1200	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	
	KC-1200	Timer control	30 minutes		Alarm - Notify Operator.	The purpose is to notify the operator if the sump pump has been running for 30 consecutive minutes.
	YI-1200	Status Indicator	On/Off		1. Indicates status of P-1200. A discord alarm will occur if P-1200 is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator.	
Treatment System - Figure 10-20						
Media Filters (F-210A/B/C)	PI/PIT-210A-1; PI/PIT-210B-1; PI/PIT-210C-1; DPI-210A/B/C	Pressure Transmitter, Differential Pressure Indicator	PLC adjustable set point to detect pressure at the inlet and outlet of each media filter	29 = low and high 30 = differential	Low pressure response: 1. Shut down power to Pumps P-200A/B/C. 2. Notify operator. 3. Flashing strobe light. High pressure response: 1. Shut down power to Pumps P-200A/B/C. 2. Notify operator. 3. Flashing strobe light. High differential pressure response: 1. Initiate change in operating trains, turn on standby train. 2. Initiate backwash sequence, turn on filter backwash pumps P-210A/B. 3. Backwashed train becomes standby.	The purpose is to optimize operation of filters and monitor pressure in filter feed line. Low pressure may indicate leakage and high pressure indicates media and/or piping may be plugged. High differential pressure indicates backwash of filters is required. The filter system will be operated via a remote control panel provided by the filter vendor. This remote control panel will be tied into the main system control panel and will receive permissive signal from the main PLC. **Note: if operating at maximum flow rate, a change in operating trains is not possible. Two vessels will operate a higher velocity for backwash period.
	FV-210A-1/2; FV-210B-1/2; FV-210C-1/2	Flow Valve	On/Off		Flow Valves will open or close depending on media filter operation. FV-210A/B/C-1 will be open during media filter operation; FV-210A/B/C-2 will be open during filter backwash. The flow valves shall be energized/de-energized in conjunction with pump P-200A/B/C and P-210A/B operation.	The purpose is to control the flow of compressed air to the pneumatic actuated valves associated with media filter operation.
Ultrafilters (F-230A/B/C)	PI/PIT-230A-1/2; PI/PIT-230B-1/2; PI/PIT-230C-1/2; DPI-230A/B/C	Pressure Transmitter, Differential Pressure Indicator	PLC adjustable set point to detect pressure at the inlet and outlet of each media filter	31 = low and high 32 = differential	Low pressure response: 1. Shut down power to Pumps P-200A/B/C. 2. Notify operator. 3. Flashing strobe light. High pressure response: 1. Shut down power to Pumps P-200A/B/C. 2. Notify operator. 3. Flashing strobe light. High differential pressure response: 1. Initiate backwash sequence, turn on Backwash Pumps P-230A/B. 2. Flashing strobe light.	The purpose is to optimize operation of the ultrafilters. Low pressure may indicate leakage and high pressure indicates membranes and/or piping may be plugged. High differential pressure indicates backwash of ultrafilters is required. The ultrafilter system will be operated via a remote control panel provided by the ultrafilter vendor. This remote control panel will be tied into the main system control panel and will receive permissive signal from the main PLC. **Note: UF backwash will not initiate a change in operating trains; backwash will occur while system is running.
	FE/FIT-230A/B/C	Totalizing flow meter with indicating transmitter	NA		4-20mA signal sent to PLC, PLC to calculate flow rate and track totalizer reading.	Flow will be used to maintain flow rate from filter feed pumps P-200A/B/C by controlling VFD on each pump.
	AE/AIT-230A/B/C	Turbidity meter	1. Turbidity = xxx - high level	33	High turbidity indicates backwash of ultrafilter is required. Initiate backwash sequence, turn on Backwash Pumps P-230A/B.	
	FV-230A-1/2; FV-230B-1/2; FV-230C-1/2	Flow Valve	PLC adjustable set point		Flow Valves will open or close depending on ultrafilter operation. FV-230A/B/C-1 will be open during ultrafilter operation; FV-230A/B/C-2 will be open during ultrafilter backwash. The flow valves shall be energized/de-energized in conjunction with pump P-200A/B/C and P-230A/B operation.	The purpose is to control the flow of compressed air to the pneumatic actuated valves associated with ultrafilter operation.
	FV-240	Flow Valve	On/Off		Flow valve FV-240 will open or close depending on timing of the backwash cycle. FV-240 will open during chemical backwash; providing compressed air to open the pneumatic actuated valve on the hydrochloric acid feed line. The flow valves shall be energized/de-energized in conjunction with pump P-230A/B operation.	The purpose is to control the flow of compressed air to the pneumatic actuated valves associated with UF chemical enhanced backwash cycle.
Ultrafilter Chemical Enhanced Backwash System	LS-240	Level switch	1. xx inches - low level	34	1. Indicates low level in hydrochloric acid tank. Alarm - notify operator.	

Footnotes on Page 12

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TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
	FV-250	Flow Valve	On/Off		Flow valve FV-250 will open or close depending on timing of the backwash cycle. FV-250 will open during chemical backwash; providing compressed air to open the pneumatic actuated valve on the sodium hypochlorite feed line. The flow valves shall be energized/de-energized in conjunction with pump P-230A/B operation.	The purpose is to control the flow of compressed air to the pneumatic actuated valves associated with UF chemical enhanced backwash cycle.
	LS-250	Level switch	1. xx inches - low level	35	1. Indicates low level in sodium hypochlorite tank. Alarm - notify operator.	
Plant Floor Leak Sensors	LS-1400A/B/C/D	Level switch	1. xx inches - high level	36	1. Indicates leak in plant. Treatment system shut down. Critical Alarm - Notify Operator.	
	LS-800-1	Level Switch	1. 12 inches - low / low level	37	Alarm - Notify Operator. Shut down surge transfer pumps P-800A/B.	
	LS-800-2	Level Switch	1. 156 inches - high level	40	Critical Alarm - Notify Operator. Shut down filter backwash pumps P-210A/B and P-230A/B.	
	LE/LIT-800-3	Level Transmitter	1. 18 inches - low level	38	1. Alarm - Notify Operator. Stop surge transfer pumps P-800A/B.	
			2. 24 inches - high level	39	2. Start surge transfer pumps P-800A/B.	
			3. 156 inches - high / high level	40	3. Critical Alarm - Notify operator. Shut down filter backwash pumps P-210A/B and P-230A/B.	
	LS-800-4	Level Switch	1. 156 inches - high / high / high level	41	1. Shut down filter backwash pumps P-210A/B and P-230A/B. Critical Alarm - Notify Operator.	
	HS-800A/B	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	P-800A/B shall operate based on water level in the backwash surge tank (T-800).
	YI-800A/B	Status Indicator	On/Off			2. p valve . ith /LIT3(pump P-230A/-800A)Tj -1pressed air B YI in position / low

2. T* (3. The phcat(op shall imt nTlarms.)Tchemicg compressed air the)Tj T* (ith pump P-230A/B)Tj T* peration.

TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
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TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾
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TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
Effluent Tank (T-500) (continued)	LS-500-4	Level Switch	1. 96 inches - high / high / high level	74	1. Treatment system shut down Critical Alarm - Notify Operator. Shut down AOP feed pumps P-300A/B.	
	AE/AIT-500-1	pH Sensor	Indication only		Data will be used to monitor the pH of water being discharged to the POTW or on-facility injection wells.	
GAC Backwash Pump (P-400A/B)	HS-400A/B	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	GAC backwash cycle will be initiated after carbon change out. Run permissives based on water level in Effluent tank T-500.
	YI-400A/B	Status Indicator	On/Off		1. Indicates status of P-400A/B. A discord alarm will occur if P-400A/B is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator	
	FV-400	Flow Valve	PLC adjustable set point		Flow Valve FV-400 opens or closes depending on the control device and alarms it is subject to. FV-400 shall be energized/de-energized in conjunction with GAC backwash pumps P-400A/B operation.	
	FE/FIT-400	Totalizing flow meter with indicating transmitter	NA		4-20mA signal sent to PLC, PLC to calculate flow rate and track totalizer reading.	
	PI/PIT-400	Pressure transmitter	PLC adjustable set point	75 = low and high	Low pressure response: 1. Shut down power to Pumps P-400. 2. Notify operator. 3. Flashing strobe light. High pressure response: 1. Shut down power to Pumps P-400. 2. Notify operator. 3. Flashing strobe light.	Low pressure may indicate leakage and high pressure indicates piping may be plugged.
Discharge Pump (P-500A/B)	HS-500A/B	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	
	YI-500A/B	Status Indicator	On/Off		1. Indicates status of P-500A/B. A discord alarm will occur if P-500A/B is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator	
On-Facility Recharge Pump (P-510)	HS-510	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	
	YI-510	Status Indicator	On/Off		1. Indicates status of P-510. A discord alarm will occur if P-510 is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator	
On-Facility Wells Recharge Line	FV-510	Flow Valve	PLC adjustable set point		Flow Valve FV-510 opens or closes depending on the control device and alarms it is subject to. FV-510 shall be energized/de-energized in conjunction with on-facility recharge pump P-510 operation.	The purpose is to control the process water discharge to the on-facility injection wells.
	FE/FIT-510	Totalizing flow meter with indicating transmitter	NA		4-20mA signal sent to PLC, PLC to calculate flow rate and track totalizer reading.	
	AE/AIT-510	pH/ORP Sensor	1. pH = xxx - low level; ORP = xxx - low level 2. pH = xxx - high level; ORP = xxx - high level	79 80	Data will be used to either start or stop the Sodium Hydroxide Metering Pump (P-700E) to ensure the correct pH is maintained in the recharge to on-facility injection wells.	
	TE/TT-510	Temperature Sensor	Manual set point	81	High temperature response: 1. Alarm - Notify Operator. 2. Shut down recharge pump P-510.	The purpose is to only recharge water with pH that is within the GCTL limits.
	PI/PCV-510	On/Off	Manual set point		PCV-510 opens or closes depending on the pressure in the on-facility injection well. PCV-510 shall be energized/de-energized in conjunction with P-510 operation.	
Water Softener Feed Pump (P-600A/B)	VFD-600A/B	Variable Flow Drive	PLC adjustable set point		P-600A/B flow rate is either increased or decreased depending on the flow rate from T-660. Flow data from FE/FIT-660 shall be used to control the VFDs on the water softener feed pumps P-600A/B in order to maintain a constant level in T-660.	The purpose is to maintain the flow rate through the water softeners (F-600A/B) and the water softener regeneration line. Run permissive based on water level in Effluent Tank T-500 and Recharge Equalization Tank T-660.
	HS-600A/B	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	
	YI-600A/B	Status Indicator	On/Off		1. Indicates status of P-600A/B. A discord alarm will occur if P-600A/B is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator	

Footnotes on Page 12

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TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
Water Softener Feed Pump (P-600A/B) (continued)	PIT-600	Pressure Transmitter	PLC adjustable set point	82 = low and high	Low pressure response: 1. Shut down power to Pumps P-600A/B. 2. Notify operator. 3. Flashing strobe light. High pressure response: 1. Shut down power to Pumps P-600A/B. 2. Notify operator. 3. Flashing strobe light.	The purpose is to optimize operation of the water softeners. Low pressure may indicate leakage and high pressure indicates membranes and/or piping may be plugged.
	HS-1000A/B	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	Run permissive based on water level in Effluent Tank T-500 and Recharge Equalization Tank T-660.
	YI-1000A/B	Status Indicator	On/Off		1. Indicates status of P-1000A/B. A discord alarm will occur if P-1000A/B is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator	
	PIT-1000	Pressure transmitter	PLC adjustable set point to detect pressure within the seal water bladder tank	83 = low 84 = high	Low pressure response: 1. Enable power to Pumps P-1000A/B. 2. Notify operator. 3. Flashing strobe light. High pressure response: 1. Disable power to Pumps P-1000A/B. 2. Notify operator. 3. Flashing strobe light.	
	PRV-1000	Pressure Reducing Valve	Manual set point		Controls the flow of treated water to either the seal flush system or the hose bibs.	
	FV-1000	Flow Valve	On/Off		Flow Valve FV-1000 opens or closes depending on the control device and alarms it is subject to. FV-1000 shall be energized/de-energized in conjunction with the water softener regeneration cycle and pump P-1000A/B operation.	The purpose is to control the flow of compressed air to the seal water bladder tank.
	LIT-610	Level Transmitter	1. xx inches = low level	85	Indicates level in tank. Alarm - notify operator.	
	FV-610	Flow Valve	On/Off		Flow Valve FV-610 opens or closes depending on the control device and alarms it is subject to. FV-610 shall be energized/de-energized in conjunction with the water softener regeneration cycle and pump P-600A/B operation.	The purpose is to control the flow of compressed air to the pneumatic actuated valve on the brine solution feed line.
	AE/AIT-500-2	pH Sensor	1. pH = xxx - low level 2. pH = xxx - high level	76 77	Data will be used to either start or stop the Sodium Hydroxide Metering Pump (P-700C) to ensure the correct pH is maintained in the discharge to the POTW.	
	FV-500	Flow Valve	PLC adjustable set point		Flow Valve FV-500 opens or closes depending on the control device and alarms it is subject to. FV-500 shall be energized/de-energized in conjunction with discharge pumps P-500A/B operation.	The purpose is to control the process water discharge to the POTW.
FE/FIT-500	Totalizing flow meter					

TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
	PIT-630-1/2; DPI-630-1/2	Pressure Transmitter and Differential Pressure Indicator	PLC adjustable set point to detect pressure at the inlet and outlet of the Cartridge Filter F-630	87 = low and high 88 = differential	Low pressure response: 1. Shut down power to RO feed pump P-640. 2. Notify operator. 3. Flashing strobe light. High pressure response: 1. Shut down power to RO feed pump P-640. 2. Notify operator. High differential pressure response: 1. Cartridge changeout required.	
	HS-640	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	Run permissive based on operation of water softener.
	YI-640	Status Indicator	On/Off		1. Indicates status of P-640. A discord alarm will occur if P-640 is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator	

TABLE 10-4
GROUNDWATER TREATMENT SYSTEM CONTROL LOGIC

REMEDIAL ACTION PLAN ADDENDUM

PROCESS UNIT	DEVICE ID	DEVICE TYPE	SET POINT	INTERLOCK	RESPONSE ⁽²⁾	COMMENT
	HS-660	HOA selector switch	1. Hand 2. Auto 3. Off		1. Treatment system shut down Critical Alarm - Notify Operator. Shut down water softener feed pumps P-600A/B and RO feed pump P-640.	
	YI-660	Status Indicator	On/Off		1. Indicates status of P-660. A discord alarm will occur if P-660 is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator	
	LS-620-1	Level Switch	1. xx inches - low / low level	101	Alarm - Notify Operator. Shut down POTW waste pump P-620.	
	LS-620-2	Level Switch	1. xx inches - high level	104	Critical Alarm - Notify Operator. Shut down water softener feed pumps P-600A/B and RO feed pump P-640.	
	LE/LIT-620-3	Level Transmitter	1. xx inches - low level 2. xx inches - high level 3. xx inches - high / high level	102 103 104	1. Alarm - Notify Operator. Stop POTW waste pump P-620. 2. Start POTW waste pump P-620. 3. Shut down water softener feed pumps P-600A/B and RO feed pump P-640.	
	LS-620-4	Level Switch	1. xx inches - high / high / high level	105	1. Treatment system shut down Critical Alarm - Notify Operator. Shut down water softener feed pumps P-600A/B and RO feed pump P-640.	
	HS-620	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	
	YI-620	Status Indicator	On/Off		1. Indicates status of P-620. A discord alarm will occur if P-620 is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator	
RO CIP Solution Storage Tank (T-670)	LIT-670	Level Transmitter	1. xx inches = low level	106	1. Indicates level in tank. 2. Alarm - notify operator.	
	HS-670	HOA selector switch	1. Hand 2. Auto 3. Off		1. The pump shall operate regardless of the status of alarms and interlocks. 2. The pump shall be subject to control devices, interlocks and alarms. 3. The pump shall not operate.	
	YI-670	Status Indicator	On/Off		1. Indicates status of P-670. A discord alarm will occur if P-670 is engaged to run and the return input from the auxiliary contact is not made. 2. Notify operator.	
RO CIP Effluent Line	FE/FIT-670	Totalizing flow meter with indicating transmitter	NA		4-20mA signal sent to PLC, PLC to calculate flow rate and track totalizer reading.	Measures the flow of RO CIP solution.
	FE/FIT-XXXX	Totalizing flow meter with indicating transmitter	NA		4-20mA signal sent to PLC, PLC to calculate flow rate and track totalizer reading. High flow response: 1. Alarm - notify operator. 2. Shut down wetlands rechargigh / highNto calculate flow rate and track totalizer reading. High flow response: 1. Alarm - notify operator. 2. Shut down wetlands rechargigh / highNto calculate flow rate and track totalizer reading.	

TABLE 12-1
SUMMARY OF MONITORING SCHEDULE

TABLE 13-1

TABLE 13-2
QUARTERLY OR SEMI-ANNUAL WATER LEVEL MONITORING PROGRAM

REMEDIAL ACTION PLAN ADDENDUM
LOCKHEED MARTIN TALLEVAST SITE
TALLEVAST, FLORIDA

USAS = Upper Surficial Aquifer System.