



February 14, 2011

Ms. Mary Boyd
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

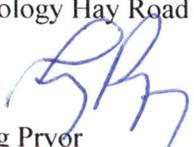
Re: Transmittal Letter for Subgrade Sampling Results and Report of Remedial
Actions, Compost High-Flow and Low-Flow Ponds, Recology Hay Road, Solano
County, California

Dear Ms. Boyd:

Enclosed are two reports prepared by Golder Associates Inc., presenting work that was recently performed at the Recology Hay Road compost area high flow and low flow ponds. One report presents the results of subgrade soil sampling beneath each pond and the second report documents the remedial actions that included repairs to the HDPE liner of both ponds.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sincerely,
Recology Hay Road



Greg Pryor
Regional Landfill Manager

Attachment

cc: Ed Padilla, Solano County Department of Resource Management
Bryan Clarkson, Recology Environmental Solutions

February 14, 2011

Project No. 053-7444-103

Greg Pryor
Recology Hay Road
6426 Hay Road
Vacaville, CA 95687

**RE: SUBGRADE SAMPLING RESULTS, COMPOST AREA POND, RECOLOGY HAY ROAD,
SOLANO COUNTY, CALIFORNIA**

Dear Mr. Pryor:

Golder Associates Inc. (Golder) has prepared this letter presenting the results of subgrade sampling to characterize the extent of potential soil impacts beneath the liner of the compost area high-flow pond at Recology Hay Road (RHR). The subgrade sampling was carried out as described in the Subgrade Sampling Plan dated September 16, 2010.¹ In addition, the subgrade below the adjacent low-flow pond was sampled.

Background

Earlier this year, RHR personnel noted that a gas bubble had formed under the base of the compost area high-flow pond liner. Inspection of the liner revealed holes below the water level along the northeastern side-slope geomembrane liner and several holes that appeared to be associated with the anchor penetrations for the pond aerators. The boot seals were observed to be torn at locations along the northeastern side slope and along the southern corner side slope.

A report on the cause of the gas formation under the compost pond liner was submitted to the Central Valley Regional Water Quality Control Board (RWQCB) by letter dated June 4, 2010. The cause of gas formation under the liner was attributed to leakage of organic-rich compost pond water through holes in the liner, leading to gas production from biodegradation of the organic constituents contained in the water under the liner. To address potential environmental impacts from the pond leakage the following steps were recommended in the June 4, 2010 letter: (1) remove the water under the liner, (2) repair the liner, and (3) sample the subgrade under the liner. Approximately 10 million gallons of water were removed from the pond throughout the summer through evaporation and pumping. Following removal of the water, the subgrade was accessible for sampling, a geoelectric leak location survey was performed, and the liner holes were repaired.

Subgrade Sampling Locations and Depths

Based on observations of the compost pond liner, it appeared that water was present under the entire pond bottom liner. Therefore, the proposed subgrade soil sample locations were selected with an even distribution over the pond bottom area. The pond surface area is approximately 5 acres. Seven sample locations (locations A through G) were selected (see Figure 1).

The design base grade elevation of the compost pond bottom is 22 feet, MSL. The groundwater elevation in the area of the pond was approximately 18 feet, MSL in August 2010. At each location, three soil samples were collected below the pond liner to a depth of approximately 4 feet, which is near the anticipated groundwater elevation.

¹ Golder Associates Inc., September 16, 2010, *Subgrade Sampling Plan, Compost Area Pond, Recology Hay Road, Solano County, California.*



During the repair work on the high-flow pond, the adjacent smaller low-flow pond (0.5 acres) was inspected and holes were observed in the liner. One set of soil samples (location H) was obtained from below the low-flow pond liner to a depth of approximately 4 feet.

Subgrade Sampling

To obtain soil samples of the compost area pond subgrade, the HDPE liner was cut by RHR personnel at each subgrade sampling location. Sand bags were placed at some of the sample locations to help reduce the amount of standing water that flowed up from below the liner. If standing water was present prior to the soil sampling, a 4-inch diameter PVC pipe was driven into the subgrade and the water inside the pipe was removed. The soil sampling was then conducted through the dry PVC pipe.

Soil samples were obtained using a 2-inch diameter, 6-inch long soil sampler that was driven into the ground. The soil samples were retained in stainless steel liner tubes inside the soil sample barrel. The soil cores were obtained at depths of 1.5 to 2 feet, 2.5 to 3 feet and 3.5 to 4 feet. The soil samples obtained in the liner tubes were removed from the soil sampler, capped at both ends and placed in a cooler on ice for transport under chain of custody to the analytical laboratory. Each boring was backfilled with bentonite pellets, and hydrated.

Soil Sample Laboratory Analyses and Calculated Tolerance Limits

The soil samples were analyzed in the laboratory for parameters potentially indicative of compost pond water (nitrogen compounds [ammonia, nitrite, nitrate, total Kjeldahl nitrogen (TKN)], chloride, sulfate, phosphorus, and total organic carbon [TOC]). The soil samples were analyzed using the modified WET test (STLC).

The Land Treatment Unit (LTU) is located adjacent to the compost area pond. The soil beneath the LTU is sampled twice per year (per WDR/MRP R5-2008-0188) to evaluate whether the sludge drying operations at the LTU have impacted soil beneath the LTU treatment zone. The LTU soil sample results were used to determine background concentrations to compare to the compost pond subgrade sample results. The tolerance interval method was used to calculate concentration limits. This method is used to estimate the concentration a constituent can exhibit and still be considered consistent with background concentrations. In other words, tolerance limits represent concentrations beyond which a significant change has occurred. Tolerance limits were calculated as described in the site's April 2002 Revised Site Specific Sampling and Analysis Plan (Conor Pacific, April 2002).

Soil Sample Results

The subgrade soil sample results are summarized in Table 1 and the laboratory analytical reports are attached (Attachment A). Three sample locations (two from the high-flow pond [A and B] and one from the low-flow pond [H]) have multiple parameters with concentrations greater than the calculated tolerance limits. The remaining sample locations either had no parameters with concentrations greater than the tolerance limits, or had only one parameter at one sample depth with a concentration greater than the tolerance limits. These other sample locations (C through G) are considered to not be impacted by the pond water leakage.

Sample locations A, B, and H had ammonia, nitrite and TKN concentrations above the tolerance limits. Note that TKN is the sum of ammonia and organic nitrogen in a sample. In addition, sample location B had chloride concentrations above the tolerance limit and location H had sulfate concentrations above the tolerance limit. All three of these locations generally had higher concentrations of some of the remaining parameters (chloride, sulfate, phosphorus, and total organic carbon) than the non-impacted sample locations. Of the three sample locations with concentrations above the tolerance limits, sample location H from the low-flow pond had higher concentrations than the other two sample locations.

At location A, the ammonia and chloride concentrations increase with depth and the TOC decreases rapidly below the shallowest (2 foot deep) sample. At location B, the ammonia, chloride, TKN, and TOC concentrations increase with depth. The concentrations at location H do not exhibit a depth trend.

Discussion of Soil Sample Results

The soil sample results do not appear to correlate with the locations of the liner holes identified visually or with the electric leak location survey. This is likely because the water that leaked through the liner covered the entire subgrade of the pond. The higher concentrations detected in soil may be areas where the soil is not as compacted, which would allow higher infiltration rates into the subgrade. Given the range of detected nitrogen compounds, the results from the soil sampling beneath the high-flow compost pond provide sufficient data to characterize the subgrade.

The nitrogen compounds detected (ammonia, nitrite, and TKN) in the subgrade soil at locations A, B, and H are indicative of low oxygen conditions (e.g., low nitrate concentrations), which is consistent with the generation of methane under the pond liner. The total nitrogen compound concentrations detected in the high-flow pond subgrade samples from locations A and B are relatively low compared to the low-flow pond subgrade and the background nitrate concentrations in groundwater at the site. It appears that the water in the high-flow pond was sufficiently dilute, such that high concentrations of inorganic parameters have not accumulated in the underlying soil subgrade. The concentrations detected in the subgrade soil below the low-flow pond, at location H, are higher and reflect the higher concentrations that are usually present in the low-flow pond water. The low-flow pond receives the leachate from the composting operation, while the high-flow pond receives runoff from the compost area.

Taking the high-flow pond subgrade sample results as a whole, the average concentrations (except for ammonia) are lower than the calculated tolerance limit concentrations (Table 1). This indicates that overall, the subgrade below the high-flow pond is not impacted by excessive concentrations of compost pond water parameters to warrant additional corrective actions.

The low-flow pond has one sample location (the pond area is much smaller than the high-flow pond, 0.5 acres), which had multiple parameters detected above the tolerance limits at all three sample depths; also at higher concentrations than the high-flow pond samples. The subgrade below the low-flow pond appears to be impacted by nitrogen compounds and sulfate. The high-flow pond is directly downgradient of the low-flow pond, so there is not a practical location to place a groundwater monitoring well downgradient of the low-flow pond.

Because the soil impacts are minor and both pond liners were repaired, no further action is recommended, other than continued groundwater monitoring of well G-26. The closest downgradient monitoring well, G-26, will continue to be evaluated for indications of potential impacts from the compost area pond leakage (Figure 2). Evaluation of groundwater data will focus on the concentrations of nitrogen compounds and any observable trends. The sulfate concentration in well G-26 (260 mg/l), as well as the site background wells, are naturally higher than concentrations observed in the subgrade soils, so no sulfate impact is anticipated.

Please contact us if you have any questions regarding this letter.

Sincerely,

GOLDER ASSOCIATES INC.



Kris H. Johnson, C.E.G. 1763
Senior Consultant

cc: Bryan Clarkson, Recology Environmental Solutions

Attachments: Table 1 - Compost Pond Subgrade Soil Sample Analytical Results
Figure 1 – Compost Area Pond Subgrade Sample Locations
Figure 2 – Groundwater Elevation Contours, August 2010
Attachment A – Laboratory Analytical Reports

TABLE 1
Compost Pond Subgrade Soil Sample Analytical Results
Recology Hay Road

Sample ID	Depth Feet	Ammonia as N mg/L	Chloride mg/L	Nitrate as N mg/L	Nitrite as N mg/L	Sulfate as SO ₄ mg/L	Total Kjeldahl Nitrogen mg/L	Phosphorus mg/L	Total Organic Carbon mg/L
High-Flow Pond Subgrade Samples									
A-1	1.5 - 2	0.42	6.7	0.045	<0.081	10	2.7	0.23	23
A-2	2.5 - 3	0.31	12	0.16	0.54	18	1.7	0.35	5.8
A-3	3.5 - 4	0.51	16	0.079	0.66	26	1.9	0.34	5.2
B-1	1.5 - 2	0.62	19	0.056	1.5	12	2.2	0.19	6.4
B-2	2.5 - 3	3.3	36	0.031	0.30	23	4.4	0.23	12
B-3	3.5 - 4	4.2	52	0.025	0.13	20	6.0	0.26	20
C-1	1.5 - 2	0.093	14	<0.1	<0.081	8.7	1.2	0.020	2.3
C-2	2.5 - 3	0.092	12	0.039	<0.081	12	1.2	0.026	1.7
C-3	3.5 - 4	0.056	6.7	0.039	<0.081	6.9	1.0	<0.016	0.75
D-1	1.5 - 2	0.064	2.5	<0.1	<0.081	3.3	0.98	0.15	8.7
D-2	2.5 - 3	0.040	2.1	0.034	0.27	15	0.95	<0.016	2.3
D-3	3.5 - 4	0.033	1.9	0.031	0.29	16	0.74	<0.016	0.86
E-1	1.5 - 2	0.33	16	0.028	<0.081	4.7	1.8	0.17	7.6
E-2	2.5 - 3	0.094	13	0.057	0.11	20	1.2	0.019	4.4
E-3	3.5 - 4	0.027	9.1	0.060	0.21	16	0.92	<0.016	7.4
F-1	1.5 - 2	0.068	24	0.034	0.19	5.9	0.86	0.017	2.8
F-2	2.5 - 3	0.042	19	0.024	<0.081	5.5	0.73	<0.016	1.9
F-3	3.5 - 4	0.042	11	0.039	<0.081	5.6	0.84	<0.016	1.2
G-1	1.5 - 2	0.10	17	0.031	<0.081	14	1.2	0.10	4.2
G-2	2.5 - 3	0.027	9.9	0.047	0.083	21	0.85	<0.016	3.1
G-3	3.5 - 4	0.040	7.8	0.031	0.21	24	0.94	<0.016	2.1
Low-Flow Pond Subgrade Samples									
H-1	1.5 - 2	18	11	0.055	0.60	35	20	0.23	17
H-2	2.5 - 3	24	8.0	0.13	0.90	57	26	0.17	13
H-3	3.5 - 4	19	5.0	0.068	0.84	53	19	0.093	12
Calculated Tolerance Limit		0.22	20	5	0.32	50	1.8	3.6	40
High-Flow Pond Average		0.5	15	0.05	0.23	14	1.6	0.10	5.9
Low-Flow Pond Average		20	8	0.08	0.78	48	22	0.16	14

Bold concentrations are higher than the tolerance limits

ATTACHMENT A
LABORATORY ANALYTICAL REPORTS



Date of Report: 11/08/2010

Kris Johnson

Golder Associates

425 Lakeside Drive
Sunnyvale, CA 94085

RE: Hay Road LF

BC Work Order: 1014107

Invoice ID: B089634

Enclosed are the results of analyses for samples received by the laboratory on 10/8/2010. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Linda Phoudamneun
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014



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Executive Summary - Detections

Constituent	Result	PQL	Units	Method
1014107-01 Hay Road LF, A-1, 10/6/2010 10:45:00AM				
pH	7.71	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.2	0.1	C	EPA-9045
Chloride	6.7	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	10	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.42	0.050	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	23	10	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	2.7	0.20	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.23	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014107-02 Hay Road LF, A-2, 10/6/2010 11:20:00AM				
pH	7.84	0.05	pH Units	EPA-9045
pH Measurement Temperature	23.9	0.1	C	EPA-9045
Chloride	12	0.50	mg/L	EPA-300.0 (Mod. STLC)
Nitrate as N	0.16	0.10	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	18	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.31	0.050	mg/L	EPA-350.1 (Mod. STLC)
Nitrite as N	0.54	0.50	mg/L	EPA-353.2 (Mod. STLC)
Non-Volatile Organic Carbon	5.8	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	1.7	0.20	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.35	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014107-03 Hay Road LF, A-3, 10/6/2010 11:40:00AM				
pH	7.87	0.05	pH Units	EPA-9045
pH Measurement Temperature	23.9	0.1	C	EPA-9045
Chloride	16	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	26	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.51	0.050	mg/L	EPA-350.1 (Mod. STLC)
Nitrite as N	0.66	0.50	mg/L	EPA-353.2 (Mod. STLC)
Non-Volatile Organic Carbon	5.2	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	1.9	0.20	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.34	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014107-04 Hay Road LF, B-1, 10/6/2010 12:15:00PM				
Chloride	19	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	12	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.62	0.050	mg/L	EPA-350.1 (Mod. STLC)
Nitrite as N	1.5	0.50	mg/L	EPA-353.2 (Mod. STLC)
Non-Volatile Organic Carbon	6.4	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	2.2	0.20	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.19	0.050	mg/L	EPA-365.4 (Mod. STLC)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Executive Summary - Detections

Constituent	Result	PQL	Units	Method
1014107-05 Hay Road LF, B-2, 10/6/2010 12:30:00PM				
pH	7.48	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.4	0.1	C	EPA-9045
Chloride	36	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	23	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	3.3	0.50	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	12	2.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	4.4	1.0	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.23	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014107-06 Hay Road LF, B-3, 10/6/2010 12:45:00PM				
pH	7.68	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.1	0.1	C	EPA-9045
Chloride	52	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	20	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	4.2	0.50	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	20	5.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	6.0	1.0	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.26	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014107-07 Hay Road LF, C-1, 10/6/2010 1:10:00PM				
pH	7.61	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.6	0.1	C	EPA-9045
Chloride	14	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	8.7	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.093	0.050	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	2.3	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	1.2	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-08 Hay Road LF, C-2, 10/6/2010 1:20:00PM				
pH	7.69	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.2	0.1	C	EPA-9045
Chloride	12	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	12	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.092	0.050	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	1.7	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	1.2	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-09 Hay Road LF, C-3, 10/6/2010 2:00:00PM				
pH	8.12	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.3	0.1	C	EPA-9045
Chloride	6.7	0.50	mg/L	EPA-300.0 (Mod. STLC)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com



Executive Summary - Detections

Constituent	Result	PQL	Units	Method
1014107-09 Hay Road LF, C-3, 10/6/2010 2:00:00PM				
Sulfate	6.9	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.056	0.050	mg/L	EPA-350.1 (Mod. STLC)
Total Kjeldahl Nitrogen	1.0	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-10 Hay Road LF, D-1, 10/6/2010 4:50:00PM				
pH	8.01	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.5	0.1	C	EPA-9045
Chloride	2.5	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	3.3	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.064	0.050	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	8.7	5.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	0.98	0.20	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.15	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014107-11 Hay Road LF, D-2, 10/6/2010 4:15:00PM				
pH	8.90	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.5	0.1	C	EPA-9045
Chloride	2.1	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	15	1.0	mg/L	EPA-300.0 (Mod. STLC)
Non-Volatile Organic Carbon	2.3	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	0.95	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-12 Hay Road LF, D-3, 10/6/2010 4:25:00PM				
pH	9.19	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.3	0.1	C	EPA-9045
Chloride	1.9	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	16	1.0	mg/L	EPA-300.0 (Mod. STLC)
Total Kjeldahl Nitrogen	0.74	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-13 Hay Road LF, E-1, 10/6/2010 2:40:00PM				
pH	7.94	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.5	0.1	C	EPA-9045
Chloride	16	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	4.7	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.33	0.050	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	7.6	2.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	1.8	0.20	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.17	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014107-14 Hay Road LF, E-2, 10/6/2010 2:50:00PM				
pH	8.49	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.1	0.1	C	EPA-9045

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Executive Summary - Detections

Constituent	Result	PQL	Units	Method
1014107-14 Hay Road LF, E-2, 10/6/2010 2:50:00PM				
Chloride	13	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	20	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.094	0.050	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	4.4	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	1.2	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-15 Hay Road LF, E-3, 10/6/2010 3:00:00PM				
pH	8.72	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.0	0.1	C	EPA-9045
Chloride	9.1	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	16	1.0	mg/L	EPA-300.0 (Mod. STLC)
Non-Volatile Organic Carbon	7.4	5.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	0.92	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-16 Hay Road LF, F-1, 10/6/2010 3:25:00PM				
pH	7.48	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.7	0.1	C	EPA-9045
Chloride	24	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	5.9	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.068	0.050	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	2.8	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	0.86	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-17 Hay Road LF, F-2, 10/6/2010 3:35:00PM				
pH	7.65	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.8	0.1	C	EPA-9045
Chloride	19	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	5.5	1.0	mg/L	EPA-300.0 (Mod. STLC)
Non-Volatile Organic Carbon	1.9	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	0.73	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-18 Hay Road LF, F-3, 10/6/2010 3:45:00PM				
pH	9.33	0.05	pH Units	EPA-9045
pH Measurement Temperature	25.0	0.1	C	EPA-9045
Chloride	11	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	5.6	1.0	mg/L	EPA-300.0 (Mod. STLC)
Non-Volatile Organic Carbon	1.2	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	0.84	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-19 Hay Road LF, G-1, 10/6/2010 4:05:00PM				
pH	8.17	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.3	0.1	C	EPA-9045

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Executive Summary - Detections

Constituent	Result	PQL	Units	Method
1014107-19 Hay Road LF, G-1, 10/6/2010 4:05:00PM				
Chloride	17	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	14	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	0.10	0.050	mg/L	EPA-350.1 (Mod. STLC)
Non-Volatile Organic Carbon	4.2	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	1.2	0.20	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.10	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014107-20 Hay Road LF, G-2, 10/6/2010 4:15:00PM				
pH	8.37	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.3	0.1	C	EPA-9045
Chloride	9.9	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	21	1.0	mg/L	EPA-300.0 (Mod. STLC)
Non-Volatile Organic Carbon	3.1	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	0.85	0.20	mg/L	EPA-351.2 (Mod. STLC)
1014107-21 Hay Road LF, G-3, 10/6/2010 4:25:00PM				
pH	8.48	0.05	pH Units	EPA-9045
pH Measurement Temperature	24.7	0.1	C	EPA-9045
Chloride	7.8	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	24	1.0	mg/L	EPA-300.0 (Mod. STLC)
Non-Volatile Organic Carbon	2.1	1.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	0.94	0.20	mg/L	EPA-351.2 (Mod. STLC)



Golder Associates CHAIN OF CUSTODY

Page 2 of 2 Quotation No.



PROJECT NO.: 053-7444-10
SITE NAME: Hay Rd - Compost pond
SAMPLER(S): M. Tadi
P. McCarthy

EDD required? Yes No
EDF required? Yes No

ANALYSES
Ammonia-N
Nitrate-N
Nitrite-N
Chloride
Sulfate
Phosphorus
etc.

Table with columns: Sample I.D., Lab I.D., Collection Date, Time, Matrix, Depth, Type/Val., Filter, Preserv., Cont. Qty., Remarks

SEND RESULTS TO: Attn: Kris Johnson
Golder Associates Inc.
425 Lakeside Drive
Sunnyvale, CA 94085
Phone (408) 220-9223
Fax (408) 220-9224

white: lab copy yellow: project file



BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 1 Of 3

Submission #: 10-14107

SHIPPING INFORMATION
 Federal Express UPS Hand Delivery
 BC Lab Field Service Other (Specify) GSO

SHIPPING CONTAINER
 Ice Chest None
 Box Other (Specify) _____

Refrigerant: Ice Blue Ice None Other Comments: _____

Custody Seals Ice Chest Containers None Comments: _____
 Intact? Yes No Intact? Yes No

All samples received? Yes No All samples containers intact? Yes No Description(s) match COC? Yes No

COC Received YES NO
 Emissivity: .95 Container: QTPe Thermometer ID: #163 Date/Time: OCT 08 2010
 Temperature: A 3.0 °C / C 3.0 °C Analyst Init: BLT 0800

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PcA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 503										
QT EPA 505/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE <u>metal</u>	<u>A,B</u>	<u>AB</u>								
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments: _____
 Sample Numbering Completed By: CLM Date/Time: 10/8/10 0955
 A = Actual / C = Corrected [H:\DOCS\WP\MAILAB_DOC\FORMS\SAMREC2.WPD]



BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 2 of 3

Submission #: 10-14107

SHIPPING INFORMATION: Federal Express UPS Hand Delivery BC Lab Field Service Other (Specify) GSO

SHIPPING CONTAINER: Ice Chest Box None Other (Specify) _____

Refrigerant: Ice Blue Ice None Other Comments: _____

Custody Seals: Ice Chest Containers None Intact? Yes No Intact? Yes No Comments: _____

All samples received? Yes No All samples containers intact? Yes No Description(s) match COC? Yes No

COC Received YES NO

Emissivity: .95 Container: Qipe Thermometer ID: #1163 Date/Time: OCT 08 2010

Temperature: A 3.0 °C / C 3.0 °C Analyst Init: BLT 0800

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
20x NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PTA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 503/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE metal	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments: _____ Date/Time: 10/10/10 1955

Sample Numbering Completed By: DM

A = Actual / C = Corrected

[H:\DOCS\WP601\LAB_DOCS\FORMS\ISANREC1.WPD]



BC LABORATORIES INC. 1978 **SAMPLE RECEIPT FORM** Rev. No. 12 06/24/08 Page 3 of 3

Submission #: 10-14107

SHIPPING INFORMATION: Federal Express UPS Hand Delivery BC Lab Field Service Other (Specify) ESD

SHIPPING CONTAINER: Ice Chest Box None Other (Specify) _____

Refrigerant: Ice Blue Ice None Other Comments: _____

Custody Seals: Ice Chest Containers None Intact? Yes No Intact? Yes No Comments: _____

All samples received? Yes No All samples containers intact? Yes No Description(s) match COC? Yes No

COC Received: YES NO

Emissivity: .95 Container: QTPe Thermometer ID: #1163 Date/Time: OCT 08 2010
 Temperature: A 3.0 °C / C 3.0 °C Analyst Init: BLT 0800

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
for NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PrA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 413.2, 418.1										
PT OBOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 308/608/808										
QT EPA 315.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE metal										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments: _____ Date/Time: 10/8/10 0955
 Sample Numbering Completed By: Cam
 A = Actual / C = Corrected



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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1014107-01	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: A-1 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 10:45 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): A-1 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-02	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: A-2 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 11:20 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): A-2 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-03	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: A-3 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 11:40 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): A-3 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-04	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: B-1 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 12:15 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): B-1 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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1014107-05	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: B-2 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 12:30 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): B-2 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-06	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: B-3 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 12:45 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): B-3 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-07	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: C-1 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 13:10 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): C-1 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-08	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: C-2 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 13:20 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): C-2 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1014107-09	COC Number:	---	Receive Date: 10/08/2010 08:00	
	Project Number:	Hay Road LF	Sampling Date: 10/06/2010 14:00	
	Sampling Location:	---	Sample Depth: ---	
	Sampling Point:	C-3	Sample Matrix: Solids	
	Sampled By:	GAMV	Delivery Work Order:	
			Global ID: L10007011530	
			Location ID (FieldPoint): C-3	
			Matrix: SO	
			Sample QC Type (SACode): CS	
			Cooler ID:	
	<hr/>			
	1014107-10	COC Number:	---	Receive Date: 10/08/2010 08:00
		Project Number:	Hay Road LF	Sampling Date: 10/06/2010 16:50
Sampling Location:		---	Sample Depth: ---	
Sampling Point:		D-1	Sample Matrix: Solids	
Sampled By:		GAMV	Delivery Work Order:	
			Global ID: L10007011530	
			Location ID (FieldPoint): D-1	
			Matrix: SO	
			Sample QC Type (SACode): CS	
			Cooler ID:	
<hr/>				
1014107-11		COC Number:	---	Receive Date: 10/08/2010 08:00
		Project Number:	Hay Road LF	Sampling Date: 10/06/2010 16:15
	Sampling Location:	---	Sample Depth: ---	
	Sampling Point:	D-2	Sample Matrix: Solids	
	Sampled By:	GAMV	Delivery Work Order:	
			Global ID: L10007011530	
			Location ID (FieldPoint): D-2	
			Matrix: SO	
			Sample QC Type (SACode): CS	
			Cooler ID:	
	<hr/>			
	1014107-12	COC Number:	---	Receive Date: 10/08/2010 08:00
		Project Number:	Hay Road LF	Sampling Date: 10/06/2010 16:25
Sampling Location:		---	Sample Depth: ---	
Sampling Point:		D-3	Sample Matrix: Solids	
Sampled By:		GAMV	Delivery Work Order:	
			Global ID: L10007011530	
			Location ID (FieldPoint): D-3	
			Matrix: SO	
			Sample QC Type (SACode): CS	
			Cooler ID:	

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Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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1014107-13	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: E-1 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 14:40 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): E-1 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-14	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: E-2 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 14:50 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): E-2 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-15	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: E-3 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 15:00 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): E-3 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-16	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: F-1 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 15:25 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): F-1 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

1014107-17	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: F-2 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 15:35 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): F-2 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-18	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: F-3 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 15:45 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): F-3 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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1014107-19	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: G-1 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 16:05 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): G-1 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
-------------------	--	--

1014107-20	COC Number: --- Project Number: Hay Road LF Sampling Location: --- Sampling Point: G-2 Sampled By: GAMV	Receive Date: 10/08/2010 08:00 Sampling Date: 10/06/2010 16:15 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): G-2 Matrix: SO Sample QC Type (SACode): CS Cooler ID:
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Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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1014107-21	COC Number: ---	Receive Date: 10/08/2010 08:00
	Project Number: Hay Road LF	Sampling Date: 10/06/2010 16:25
	Sampling Location: ---	Sample Depth: ---
	Sampling Point: G-3	Sample Matrix: Solids
	Sampled By: GAMV	Delivery Work Order:
		Global ID: L10007011530
		Location ID (FieldPoint): G-3
		Matrix: SO
	Sample QC Type (SACode): CS	
	Cooler ID:	



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-01	Client Sample Name: Hay Road LF, A-1, 10/6/2010 10:45:00AM
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.71	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.2	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-01	Client Sample Name: Hay Road LF, A-1, 10/6/2010 10:45:00AM
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	6.7	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	0.045	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	10	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.42	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	23	mg/L	10	0.62	EPA-415.1	3.0	A01	4
Total Kjeldahl Nitrogen	2.7	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.23	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 10:22	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 09:53	CDR	SC-1	1	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:32	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/03/10 12:29	TMS	TOC2	10	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:24	CDR	SC-1	1	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:24	CDR	SC-1	1	BTJ1834

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Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-02	Client Sample Name: Hay Road LF, A-2, 10/6/2010 11:20:00AM
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.84	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	23.9	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-02	Client Sample Name: Hay Road LF, A-2, 10/6/2010 11:20:00AM
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	12	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	0.16	mg/L	0.10	0.014	EPA-300.0	ND		1
Sulfate	18	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.31	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	0.54	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	5.8	mg/L	1.0	0.062	EPA-415.1	0.30		4
Total Kjeldahl Nitrogen	1.7	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.35	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 10:35	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 09:54	CDR	SC-1	1	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:03	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/02/10 22:34	TMS	TOC2	1	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:25	CDR	SC-1	1	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:25	CDR	SC-1	1	BTJ1834



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-03	Client Sample Name: Hay Road LF, A-3, 10/6/2010 11:40:00AM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.87	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	23.9	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-03	Client Sample Name: Hay Road LF, A-3, 10/6/2010 11:40:00AM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	16	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	0.079	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	26	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.51	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	0.66	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	5.2	mg/L	1.0	0.062	EPA-415.1	0.30		4
Total Kjeldahl Nitrogen	1.9	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.34	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 10:49	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 09:57	CDR	SC-1	1	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:03	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/02/10 22:47	TMS	TOC2	1	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:27	CDR	SC-1	1	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:27	CDR	SC-1	1	BTJ1834

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Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-04	Client Sample Name: Hay Road LF, B-1, 10/6/2010 12:15:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	19	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	0.056	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	12	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.62	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	1.5	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	6.4	mg/L	1.0	0.062	EPA-415.1	0.30		4
Total Kjeldahl Nitrogen	2.2	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.19	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 11:02	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 09:58	CDR	SC-1	1	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:03	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/02/10 23:27	TMS	TOC2	1	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:29	CDR	SC-1	1	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:27	CDR	SC-1	1	BTJ1834

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-05	Client Sample Name: Hay Road LF, B-2, 10/6/2010 12:30:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.48	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.4	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-05	Client Sample Name: Hay Road LF, B-2, 10/6/2010 12:30:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	36	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	0.031	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	23	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	3.3	mg/L	0.50	0.25	EPA-350.1	ND	A01	2
Nitrite as N	0.30	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	12	mg/L	2.0	0.12	EPA-415.1	0.60	A01	4
Total Kjeldahl Nitrogen	4.4	mg/L	1.0	0.28	EPA-351.2	ND	A01	5
Total Phosphorus	0.23	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 11:16	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 09:58	CDR	SC-1	10	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:03	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/02/10 23:40	TMS	TOC2	2	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:48	CDR	SC-1	5	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:28	CDR	SC-1	1	BTJ1834



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Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-06	Client Sample Name: Hay Road LF, B-3, 10/6/2010 12:45:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.68	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.1	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893

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Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-06	Client Sample Name: Hay Road LF, B-3, 10/6/2010 12:45:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	52	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	0.025	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	20	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	4.2	mg/L	0.50	0.25	EPA-350.1	ND	A01	2
Nitrite as N	0.13	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	20	mg/L	5.0	0.31	EPA-415.1	1.5	A01	4
Total Kjeldahl Nitrogen	6.0	mg/L	1.0	0.28	EPA-351.2	ND	A01	5
Total Phosphorus	0.26	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 11:29	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 10:00	CDR	SC-1	10	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:03	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/02/10 23:53	TMS	TOC2	5	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:50	CDR	SC-1	5	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:29	CDR	SC-1	1	BTJ1834

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-07	Client Sample Name: Hay Road LF, C-1, 10/6/2010 1:10:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.61	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.6	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-07	Client Sample Name: Hay Road LF, C-1, 10/6/2010 1:10:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	14	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	ND	mg/L	0.10	0.014	EPA-300.0	ND		1
Sulfate	8.7	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.093	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	2.3	mg/L	1.0	0.062	EPA-415.1	0.30		4
Total Kjeldahl Nitrogen	1.2	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.020	mg/L	0.050	0.016	EPA-365.4	ND	J	6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 11:43	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 10:00	CDR	SC-1	1	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:03	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/03/10 00:06	TMS	TOC2	1	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:31	CDR	SC-1	1	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:29	CDR	SC-1	1	BTJ1834

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-08	Client Sample Name: Hay Road LF, C-2, 10/6/2010 1:20:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.69	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.2	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893

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Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-08	Client Sample Name: Hay Road LF, C-2, 10/6/2010 1:20:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	12	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	0.039	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	12	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.092	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	1.7	mg/L	1.0	0.062	EPA-415.1	0.30		4
Total Kjeldahl Nitrogen	1.2	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.026	mg/L	0.050	0.016	EPA-365.4	ND	J	6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 11:56	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 10:02	CDR	SC-1	1	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:03	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/03/10 00:19	TMS	TOC2	1	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:32	CDR	SC-1	1	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:30	CDR	SC-1	1	BTJ1834

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-09	Client Sample Name: Hay Road LF, C-3, 10/6/2010 2:00:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	8.12	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.3	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893

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Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-09	Client Sample Name: Hay Road LF, C-3, 10/6/2010 2:00:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	6.7	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	0.039	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	6.9	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.056	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	0.75	mg/L	1.0	0.062	EPA-415.1	0.30	J	4
Total Kjeldahl Nitrogen	1.0	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	ND	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 12:37	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 10:02	CDR	SC-1	1	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 09:03	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/03/10 00:32	TMS	TOC2	1	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:33	CDR	SC-1	1	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:30	CDR	SC-1	1	BTJ1834



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-10	Client Sample Name: Hay Road LF, D-1, 10/6/2010 4:50:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	8.01	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.5	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893

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425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-10	Client Sample Name: Hay Road LF, D-1, 10/6/2010 4:50:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	2.5	mg/L	0.50	0.050	EPA-300.0	0.15		1
Nitrate as N	ND	mg/L	0.10	0.014	EPA-300.0	ND		1
Sulfate	3.3	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.064	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	8.7	mg/L	5.0	0.31	EPA-415.1	1.5	A01	4
Total Kjeldahl Nitrogen	0.98	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.15	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/26/10	10/26/10 12:50	LD1	IC1	1	BTJ1747
2	EPA-350.1	10/27/10	10/27/10 09:49	CDR	SC-1	1	BTJ1820
3	EPA-353.2	10/22/10	10/26/10 08:42	TDC	KONE-1	10	BTJ1655
4	EPA-415.1	11/01/10	11/03/10 11:37	TMS	TOC2	5	BTK0080
5	EPA-351.2	10/26/10	10/27/10 15:20	CDR	SC-1	1	BTJ1761
6	EPA-365.4	10/26/10	10/27/10 16:22	CDR	SC-1	1	BTJ1834

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Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-11	Client Sample Name: Hay Road LF, D-2, 10/6/2010 4:15:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	8.90	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.5	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-11	Client Sample Name: Hay Road LF, D-2, 10/6/2010 4:15:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	2.1	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.034	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	15	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.040	mg/L	0.050	0.025	EPA-350.1	ND	J	2
Nitrite as N	0.27	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	2.3	mg/L	1.0	0.062	EPA-415.1	0.21		4
Total Kjeldahl Nitrogen	0.95	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	ND	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 12:02	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:11	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:36	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/05/10 11:03	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:49	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:34	CDR	SC-1	1	BTJ1868

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-12	Client Sample Name: Hay Road LF, D-3, 10/6/2010 4:25:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	9.19	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.3	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-12	Client Sample Name: Hay Road LF, D-3, 10/6/2010 4:25:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	1.9	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.031	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	16	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.033	mg/L	0.050	0.025	EPA-350.1	ND	J	2
Nitrite as N	0.29	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	0.86	mg/L	1.0	0.062	EPA-415.1	0.21	J	4
Total Kjeldahl Nitrogen	0.74	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	ND	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 12:16	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:11	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:36	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/03/10 02:45	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:50	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:35	CDR	SC-1	1	BTJ1868



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-13	Client Sample Name: Hay Road LF, E-1, 10/6/2010 2:40:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.94	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.5	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-13	Client Sample Name: Hay Road LF, E-1, 10/6/2010 2:40:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	16	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.028	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	4.7	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.33	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	7.6	mg/L	2.0	0.12	EPA-415.1	0.42	A01	4
Total Kjeldahl Nitrogen	1.8	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.17	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 12:29	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:13	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:36	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/03/10 02:59	TMS	TOC2	2	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:52	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:36	CDR	SC-1	1	BTJ1868

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-14	Client Sample Name: Hay Road LF, E-2, 10/6/2010 2:50:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	8.49	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.1	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-14	Client Sample Name: Hay Road LF, E-2, 10/6/2010 2:50:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	13	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.057	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	20	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.094	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	0.11	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	4.4	mg/L	1.0	0.062	EPA-415.1	0.21		4
Total Kjeldahl Nitrogen	1.2	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.019	mg/L	0.050	0.016	EPA-365.4	ND	J	6

Run #	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC
			Date/Time					Batch ID
1	EPA-300.0	10/27/10	10/27/10	12:43	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10	10:13	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10	11:36	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/05/10	11:17	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10	18:54	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10	19:37	CDR	SC-1	1	BTJ1868

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-15	Client Sample Name: Hay Road LF, E-3, 10/6/2010 3:00:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	8.72	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.0	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-15	Client Sample Name: Hay Road LF, E-3, 10/6/2010 3:00:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	9.1	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.060	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	16	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.027	mg/L	0.050	0.025	EPA-350.1	ND	J	2
Nitrite as N	0.21	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	7.4	mg/L	5.0	0.31	EPA-415.1	1.1	A01	4
Total Kjeldahl Nitrogen	0.92	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	ND	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 12:56	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:16	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:40	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/03/10 03:25	TMS	TOC2	5	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:54	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:37	CDR	SC-1	1	BTJ1868



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-16	Client Sample Name: Hay Road LF, F-1, 10/6/2010 3:25:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.48	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.7	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-16	Client Sample Name: Hay Road LF, F-1, 10/6/2010 3:25:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	24	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.034	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	5.9	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.068	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	0.19	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	2.8	mg/L	1.0	0.062	EPA-415.1	0.21		4
Total Kjeldahl Nitrogen	0.86	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.017	mg/L	0.050	0.016	EPA-365.4	ND	J	6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 13:10	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:18	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:40	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/03/10 03:39	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:56	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:38	CDR	SC-1	1	BTJ1868

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Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-17	Client Sample Name: Hay Road LF, F-2, 10/6/2010 3:35:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.65	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.8	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-17	Client Sample Name: Hay Road LF, F-2, 10/6/2010 3:35:00PM
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	19	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.024	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	5.5	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.042	mg/L	0.050	0.025	EPA-350.1	ND	J	2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	1.9	mg/L	1.0	0.062	EPA-415.1	0.21		4
Total Kjeldahl Nitrogen	0.73	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	ND	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC
			Date/Time					Batch ID
1	EPA-300.0	10/27/10	10/27/10	13:24	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10	10:20	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10	11:40	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/03/10	03:52	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10	18:56	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10	19:38	CDR	SC-1	1	BTJ1868



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-18	Client Sample Name: Hay Road LF, F-3, 10/6/2010 3:45:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	9.33	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	25.0	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893

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Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-18	Client Sample Name: Hay Road LF, F-3, 10/6/2010 3:45:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	11	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.039	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	5.6	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.042	mg/L	0.050	0.025	EPA-350.1	ND	J	2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	1.2	mg/L	1.0	0.062	EPA-415.1	0.21		4
Total Kjeldahl Nitrogen	0.84	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	ND	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 13:37	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:20	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:40	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/03/10 04:05	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:57	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:39	CDR	SC-1	1	BTJ1868

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-19	Client Sample Name: Hay Road LF, G-1, 10/6/2010 4:05:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	8.17	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.3	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-19	Client Sample Name: Hay Road LF, G-1, 10/6/2010 4:05:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	17	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.031	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	14	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.10	mg/L	0.050	0.025	EPA-350.1	ND		2
Nitrite as N	ND	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	4.2	mg/L	1.0	0.062	EPA-415.1	0.21		4
Total Kjeldahl Nitrogen	1.2	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	0.10	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 14:18	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:22	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:40	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/03/10 04:45	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:58	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:40	CDR	SC-1	1	BTJ1868



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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-20	Client Sample Name: Hay Road LF, G-2, 10/6/2010 4:15:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	8.37	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.3	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0893



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425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-20	Client Sample Name: Hay Road LF, G-2, 10/6/2010 4:15:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	9.9	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.047	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	21	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.027	mg/L	0.050	0.025	EPA-350.1	ND	J	2
Nitrite as N	0.083	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	3.1	mg/L	1.0	0.062	EPA-415.1	0.21		4
Total Kjeldahl Nitrogen	0.85	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	ND	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 14:32	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:22	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:40	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/05/10 11:30	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:59	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:41	CDR	SC-1	1	BTJ1868

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

BCL Sample ID: 1014107-21	Client Sample Name: Hay Road LF, G-3, 10/6/2010 4:25:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	8.48	pH Units	0.05	0.05	EPA-9045		pH1:1	1
pH Measurement Temperature	24.7	C	0.1	0.1	EPA-9045			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045	10/13/10	10/13/10 15:00	RML	B360	1	BTJ0894



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425 Lakeside Drive
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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014107-21	Client Sample Name: Hay Road LF, G-3, 10/6/2010 4:25:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	7.8	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.031	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	24	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	0.040	mg/L	0.050	0.025	EPA-350.1	ND	J	2
Nitrite as N	0.21	mg/L	0.50	0.081	EPA-353.2	ND	J	3
Non-Volatile Organic Carbon	2.1	mg/L	1.0	0.062	EPA-415.1	0.21		4
Total Kjeldahl Nitrogen	0.94	mg/L	0.20	0.056	EPA-351.2	ND		5
Total Phosphorus	ND	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/27/10	10/27/10 14:45	LD1	IC2	1	BTJ1900
2	EPA-350.1	10/27/10	10/27/10 10:07	CDR	SC-1	1	BTJ1821
3	EPA-353.2	10/22/10	10/27/10 11:36	TDC	KONE-1	10	BTJ1656
4	EPA-415.1	11/01/10	11/03/10 01:12	TMS	TOC2	1	BTK0081
5	EPA-351.2	10/27/10	10/28/10 18:45	CDR	SC-1	1	BTJ1863
6	EPA-365.4	10/27/10	10/28/10 19:31	CDR	SC-1	1	BTJ1868

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BTJ0893										
pH	BTJ0893-BS1	LCS	6.9210	7.0000	pH Units	98.9		95	105	
QC Batch ID: BTJ0894										
pH	BTJ0894-BS1	LCS	6.9000	7.0000	pH Units	98.6		95	105	



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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Chemical Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: BTJ0893		Used client sample: Y - Description: A-1, 10/06/2010 10:45								
pH	DUP	1014107-01	7.7110	7.7100		pH Units	0.0		20	
QC Batch ID: BTJ0894		Used client sample: Y - Description: G-3, 10/06/2010 16:25								
pH	DUP	1014107-21	8.4770	8.4790		pH Units	0.0		20	



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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTJ1655						
Nitrite as N	BTJ1655-BLK1	ND	mg/L	0.50	0.081	
QC Batch ID: BTJ1656						
Nitrite as N	BTJ1656-BLK1	ND	mg/L	0.50	0.081	
QC Batch ID: BTJ1747						
Chloride	BTJ1747-BLK1	0.14900	mg/L	0.50	0.050	J
Nitrate as N	BTJ1747-BLK1	ND	mg/L	0.10	0.014	
Sulfate	BTJ1747-BLK1	ND	mg/L	1.0	0.10	
QC Batch ID: BTJ1761						
Total Kjeldahl Nitrogen	BTJ1761-BLK1	ND	mg/L	0.20	0.056	
QC Batch ID: BTJ1820						
Ammonia as N	BTJ1820-BLK1	ND	mg/L	0.050	0.025	
QC Batch ID: BTJ1821						
Ammonia as N	BTJ1821-BLK1	ND	mg/L	0.050	0.025	
QC Batch ID: BTJ1834						
Total Phosphorus	BTJ1834-BLK1	ND	mg/L	0.050	0.016	
QC Batch ID: BTJ1863						
Total Kjeldahl Nitrogen	BTJ1863-BLK1	ND	mg/L	0.20	0.056	
QC Batch ID: BTJ1868						
Total Phosphorus	BTJ1868-BLK1	ND	mg/L	0.050	0.016	
QC Batch ID: BTJ1900						
Chloride	BTJ1900-BLK1	ND	mg/L	0.50	0.050	
Nitrate as N	BTJ1900-BLK1	ND	mg/L	0.10	0.014	
Sulfate	BTJ1900-BLK1	ND	mg/L	1.0	0.10	
QC Batch ID: BTK0080						
Non-Volatile Organic Carbon	BTK0080-BLK1	0.30000	mg/L	1.0	0.062	J
QC Batch ID: BTK0081						
Non-Volatile Organic Carbon	BTK0081-BLK1	0.21200	mg/L	1.0	0.062	J

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: BTJ1655										
Nitrite as N	BTJ1655-BS1	LCS	4.6377	5.0000	mg/L	92.8		90 - 110		
QC Batch ID: BTJ1656										
Nitrite as N	BTJ1656-BS1	LCS	4.8107	5.2632	mg/L	91.4		90 - 110		
QC Batch ID: BTJ1747										
Chloride	BTJ1747-BS1	LCS	105.55	100.00	mg/L	106		90 - 110		
Nitrate as N	BTJ1747-BS1	LCS	5.3210	5.0000	mg/L	106		90 - 110		
Sulfate	BTJ1747-BS1	LCS	104.54	100.00	mg/L	105		90 - 110		
QC Batch ID: BTJ1761										
Total Kjeldahl Nitrogen	BTJ1761-BS1	LCS	2.1242	2.0000	mg/L	106		85 - 115		
QC Batch ID: BTJ1820										
Ammonia as N	BTJ1820-BS1	LCS	1.0225	1.0000	mg/L	102		90 - 110		
QC Batch ID: BTJ1821										
Ammonia as N	BTJ1821-BS1	LCS	0.99020	1.0000	mg/L	99.0		90 - 110		
QC Batch ID: BTJ1834										
Total Phosphorus	BTJ1834-BS1	LCS	0.99630	1.0000	mg/L	99.6		85 - 115		
QC Batch ID: BTJ1863										
Total Kjeldahl Nitrogen	BTJ1863-BS1	LCS	2.0672	2.0000	mg/L	103		85 - 115		
QC Batch ID: BTJ1868										
Total Phosphorus	BTJ1868-BS1	LCS	0.97770	1.0000	mg/L	97.8		85 - 115		
QC Batch ID: BTJ1900										
Chloride	BTJ1900-BS1	LCS	106.83	100.00	mg/L	107		90 - 110		
Nitrate as N	BTJ1900-BS1	LCS	5.0740	5.0000	mg/L	101		90 - 110		
Sulfate	BTJ1900-BS1	LCS	102.63	100.00	mg/L	103		90 - 110		
QC Batch ID: BTK0080										
Non-Volatile Organic Carbon	BTK0080-BS1	LCS	5.1170	5.0000	mg/L	102		85 - 115		
QC Batch ID: BTK0081										
Non-Volatile Organic Carbon	BTK0081-BS1	LCS	5.2400	5.0000	mg/L	105		85 - 115		

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

Quality Control Report - Precision & Accuracy

Table with columns: Constituent, Type, Source Sample ID, Source Result, Result, Spike Added, Units, RPD, Percent Recovery, Control Limits RPD, Control Limits Percent Recovery, Lab Quals. Includes multiple QC batches (BTJ1655, BTJ1656, BTJ1747, BTJ1761, BTJ1820, BTJ1821, BTJ1834, BTJ1863) and their respective test results.

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Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Modified WET Test (STLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab
								Percent Recovery	Percent Recovery	
QC Batch ID: BTJ1868		Used client sample: Y - Description: G-3, 10/06/2010 16:25								
Total Phosphorus	DUP	1014107-21	ND	ND		mg/L			20	
	MS	1014107-21	ND	0.96240	1.0000	mg/L		96.2		80 - 120
	MSD	1014107-21	ND	0.97900	1.0000	mg/L	1.7	97.9	20	80 - 120
QC Batch ID: BTJ1900		Used client sample: Y - Description: G-3, 10/06/2010 16:25								
Chloride	DUP	1014107-21	7.8050	7.8080		mg/L	0.0		20	
	MS	1014107-21	7.8050	116.90	101.01	mg/L		108		80 - 120
	MSD	1014107-21	7.8050	115.83	101.01	mg/L	1.0	107	20	80 - 120
Nitrate as N	DUP	1014107-21	0.031000	0.033000		mg/L	6.3		20	J
	MS	1014107-21	0.031000	5.0929	5.0505	mg/L		100		80 - 120
	MSD	1014107-21	0.031000	5.0232	5.0505	mg/L	1.4	98.8	20	80 - 120
Sulfate	DUP	1014107-21	23.731	23.772		mg/L	0.2		20	
	MS	1014107-21	23.731	131.11	101.01	mg/L		106		80 - 120
	MSD	1014107-21	23.731	129.63	101.01	mg/L	1.4	105	20	80 - 120
QC Batch ID: BTK0080		Used client sample: Y - Description: D-1, 10/06/2010 16:50								
Non-Volatile Organic Carbon	DUP	1014107-10	8.7200	8.3450		mg/L	4.4		20	
	MS	1014107-10	8.7200	32.698	25.126	mg/L		95.4		80 - 120
	MSD	1014107-10	8.7200	32.111	25.126	mg/L	2.5	93.1	20	80 - 120
QC Batch ID: BTK0081		Used client sample: Y - Description: G-3, 10/06/2010 16:25								
Non-Volatile Organic Carbon	DUP	1014107-21	2.0970	2.1020		mg/L	0.2		20	
	MS	1014107-21	2.0970	7.0854	5.0251	mg/L		99.3		80 - 120
	MSD	1014107-21	2.0970	7.1045	5.0251	mg/L	0.4	99.6	20	80 - 120

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Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/08/2010 11:41
Project: Hay Road LF
Project Number: 053-7444-10
Project Manager: Kris Johnson

Notes And Definitions

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected at or above the reporting limit
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference
- A01 PQL's and MDL's are raised due to sample dilution.
- A02 The difference between duplicate readings is less than the PQL.
- pH1:1 pH result reported on a 1:1 dilution of sample



Date of Report: 11/19/2010

Kris Johnson

Golder Associates

425 Lakeside Drive
Sunnyvale, CA 94085

RE: Hay Road LF

BC Work Order: 1014406

Invoice ID: B090294

Enclosed are the results of analyses for samples received by the laboratory on 10/13/2010. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Linda Phoudamneun
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014



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Executive Summary - Detections

Constituent	Result	PQL	Units	Method
1014406-01 Hay Road, H-1-1.5', 10/13/2010 10:00:00AM				
Chloride	11	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	35	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	18	1.0	mg/L	EPA-350.1 (Mod. STLC)
Nitrite as N	0.60	0.50	mg/L	EPA-353.2 (Mod. STLC)
Non-Volatile Organic Carbon	17	5.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	20	1.0	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.23	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014406-02 Hay Road, H-2-2.5', 10/13/2010 10:07:00AM				
Chloride	8.0	0.50	mg/L	EPA-300.0 (Mod. STLC)
Nitrate as N	0.13	0.10	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	57	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	24	1.0	mg/L	EPA-350.1 (Mod. STLC)
Nitrite as N	0.90	0.50	mg/L	EPA-353.2 (Mod. STLC)
Non-Volatile Organic Carbon	13	5.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	26	2.0	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.17	0.050	mg/L	EPA-365.4 (Mod. STLC)
1014406-03 Hay Road, H-3-3.5', 10/13/2010 10:15:00AM				
Chloride	5.0	0.50	mg/L	EPA-300.0 (Mod. STLC)
Sulfate	53	1.0	mg/L	EPA-300.0 (Mod. STLC)
Ammonia as N	19	1.0	mg/L	EPA-350.1 (Mod. STLC)
Nitrite as N	0.84	0.50	mg/L	EPA-353.2 (Mod. STLC)
Non-Volatile Organic Carbon	12	5.0	mg/L	EPA-415.1 (Mod. STLC)
Total Kjeldahl Nitrogen	19	1.0	mg/L	EPA-351.2 (Mod. STLC)
Total Phosphorus	0.093	0.050	mg/L	EPA-365.4 (Mod. STLC)

Golder Associates CHAIN OF CUSTODY



Page 1 of 1 Quotation No.

PROJECT NO: 053-7444-10 SITE NAME: HAY DA. CONTRACT LABORATORY: BC LABS TURN-AROUND TIME: STANDARD

SAMPLER(S): S. GARDNER 2. MCCORMY

ANALYSES: Ammonium Nitrate, Nitrate, Nitrite, Sulfate, Phosphorus, TOC

Table with columns: Sample I.D., Lab I.D., Collection Date, Matrix, Depth, Type/Vol., Filter, Preserv., Cont. Qty., Remarks. Includes handwritten entries for samples H-1, H-2, H-3 and remarks like 'ANALYZE USING MODIFIED WET TEST (SUC)'.

CHK BY DISTRIBUTION [Signature]

SEND RESULTS TO: Attn: KRIS JOHNSON, Golder Associates Inc., 425 Lakeside Drive, Sunnyvale, CA 94085. Includes Date/Time and Received by signatures.



Laboratories, Inc.

Environmental Testing Laboratory Since 1949

BC LABORATORIES INC.		SAMPLE RECEIPT FORM		Rev. No. 12	06/24/08	Page 1	Of 1
Submission #: <u>10-14406</u>							
SHIPPING INFORMATION Federal Express <input type="checkbox"/> UPS <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____				SHIPPING CONTAINER Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments:							
Custody Seals Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>							
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.95</u> Container: <u>PPE</u> Thermometer ID: <u>1103</u>		Date/Time <u>10-13-10</u>		Analyst Init <u>JWJ</u> <u>2120</u>	
Temperature: A <u>5.7</u> °C / C <u>5.7</u> °C							

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
10L NITRATE /NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 413.1, 413.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/608										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 325 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ JAR										
32 OZ JAR										
SOIL SLEEVE		A	A	A						
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments: _____
 Sample Numbering Completed By: JWJ Date/Time: 10/13/10 2231
 A = Actual / C = Corrected



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/19/2010 1:24
Project: Hay Road LF
Project Number: 053-7444-07
Project Manager: Kris Johnson

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

1014406-01	COC Number: --- Project Number: Hay Road Sampling Location: --- Sampling Point: H-1-1.5' Sampled By: GAMV	Receive Date: 10/13/2010 21:10 Sampling Date: 10/13/2010 10:00 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): H-1-1.5' Matrix: SO Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

1014406-02	COC Number: --- Project Number: Hay Road Sampling Location: --- Sampling Point: H-2-2.5' Sampled By: GAMV	Receive Date: 10/13/2010 21:10 Sampling Date: 10/13/2010 10:07 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): H-2-2.5' Matrix: SO Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

1014406-03	COC Number: --- Project Number: Hay Road Sampling Location: --- Sampling Point: H-3-3.5' Sampled By: GAMV	Receive Date: 10/13/2010 21:10 Sampling Date: 10/13/2010 10:15 Sample Depth: --- Sample Matrix: Solids Delivery Work Order: Global ID: L10007011530 Location ID (FieldPoint): H-3-3.5' Matrix: SO Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/19/2010 1:24
Project: Hay Road LF
Project Number: 053-7444-07
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014406-01	Client Sample Name: Hay Road, H-1-1.5', 10/13/2010 10:00:00AM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	11	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.055	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	35	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	18	mg/L	1.0	0.50	EPA-350.1	ND	A01	2
Nitrite as N	0.60	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	17	mg/L	5.0	0.31	EPA-415.1	0.70	A01	4
Total Kjeldahl Nitrogen	20	mg/L	1.0	0.28	EPA-351.2	ND	A01	5
Total Phosphorus	0.23	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/29/10	10/29/10 14:01	LD1	IC1	1	BTJ2078
2	EPA-350.1	11/04/10	11/04/10 15:59	SDU	SC-1	20	BTK0435
3	EPA-353.2	10/28/10	10/29/10 10:46	TDC	KONE-1	10	BTJ1728
4	EPA-415.1	11/08/10	11/08/10 20:13	TMS	TOC2	5	BTK0743
5	EPA-351.2	11/01/10	11/03/10 17:21	SDU	SC-1	5	BTK0052
6	EPA-365.4	11/01/10	11/03/10 18:08	SDU	SC-1	1	BTK0054



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/19/2010 1:24
Project: Hay Road LF
Project Number: 053-7444-07
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014406-02	Client Sample Name: Hay Road, H-2-2.5', 10/13/2010 10:07:00AM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	8.0	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.13	mg/L	0.10	0.014	EPA-300.0	ND		1
Sulfate	57	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	24	mg/L	1.0	0.50	EPA-350.1	ND	A01	2
Nitrite as N	0.90	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	13	mg/L	5.0	0.31	EPA-415.1	0.70	A01	4
Total Kjeldahl Nitrogen	26	mg/L	2.0	0.56	EPA-351.2	ND	A01	5
Total Phosphorus	0.17	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/29/10	10/29/10 14:15	LD1	IC1	1	BTJ2078
2	EPA-350.1	11/04/10	11/04/10 16:00	SDU	SC-1	20	BTK0435
3	EPA-353.2	10/28/10	10/29/10 10:46	TDC	KONE-1	10	BTJ1728
4	EPA-415.1	11/08/10	11/08/10 20:26	TMS	TOC2	5	BTK0743
5	EPA-351.2	11/01/10	11/03/10 17:37	SDU	SC-1	10	BTK0052
6	EPA-365.4	11/01/10	11/03/10 18:09	SDU	SC-1	1	BTK0054



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/19/2010 1:24
Project: Hay Road LF
Project Number: 053-7444-07
Project Manager: Kris Johnson

Modified WET Test (STLC)

BCL Sample ID: 1014406-03	Client Sample Name: Hay Road, H-3-3.5', 10/13/2010 10:15:00AM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	5.0	mg/L	0.50	0.050	EPA-300.0	ND		1
Nitrate as N	0.068	mg/L	0.10	0.014	EPA-300.0	ND	J	1
Sulfate	53	mg/L	1.0	0.10	EPA-300.0	ND		1
Ammonia as N	19	mg/L	1.0	0.50	EPA-350.1	ND	A01	2
Nitrite as N	0.84	mg/L	0.50	0.081	EPA-353.2	ND		3
Non-Volatile Organic Carbon	12	mg/L	5.0	0.31	EPA-415.1	0.70	A01	4
Total Kjeldahl Nitrogen	19	mg/L	1.0	0.28	EPA-351.2	ND	A01	5
Total Phosphorus	0.093	mg/L	0.050	0.016	EPA-365.4	ND		6

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-300.0	10/29/10	10/29/10 14:28	LD1	IC1	1	BTJ2078
2	EPA-350.1	11/04/10	11/04/10 15:55	SDU	SC-1	20	BTK0435
3	EPA-353.2	10/28/10	10/29/10 10:43	TDC	KONE-1	10	BTJ1728
4	EPA-415.1	11/08/10	11/08/10 19:20	TMS	TOC2	5	BTK0743
5	EPA-351.2	11/01/10	11/03/10 17:13	SDU	SC-1	5	BTK0052
6	EPA-365.4	11/01/10	11/03/10 18:05	SDU	SC-1	1	BTK0054



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/19/2010 1:24
Project: Hay Road LF
Project Number: 053-7444-07
Project Manager: Kris Johnson

Modified WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTJ1728						
Nitrite as N	BTJ1728-BLK1	ND	mg/L	0.50	0.081	
QC Batch ID: BTJ2078						
Chloride	BTJ2078-BLK1	ND	mg/L	0.50	0.050	
Nitrate as N	BTJ2078-BLK1	ND	mg/L	0.10	0.014	
Sulfate	BTJ2078-BLK1	ND	mg/L	1.0	0.10	
QC Batch ID: BTK0052						
Total Kjeldahl Nitrogen	BTK0052-BLK1	ND	mg/L	0.20	0.056	
QC Batch ID: BTK0054						
Total Phosphorus	BTK0054-BLK1	ND	mg/L	0.050	0.016	
QC Batch ID: BTK0435						
Ammonia as N	BTK0435-BLK1	ND	mg/L	0.050	0.025	
QC Batch ID: BTK0743						
Non-Volatile Organic Carbon	BTK0743-BLK1	0.14000	mg/L	1.0	0.062	J



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/19/2010 1:24
Project: Hay Road LF
Project Number: 053-7444-07
Project Manager: Kris Johnson

Modified WET Test (STLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: BTJ1728										
Nitrite as N	BTJ1728-BS1	LCS	4.7394	5.0000	mg/L	94.8		90 - 110		
QC Batch ID: BTJ2078										
Chloride	BTJ2078-BS1	LCS	101.80	100.00	mg/L	102		90 - 110		
Nitrate as N	BTJ2078-BS1	LCS	4.9130	5.0000	mg/L	98.3		90 - 110		
Sulfate	BTJ2078-BS1	LCS	97.919	100.00	mg/L	97.9		90 - 110		
QC Batch ID: BTK0052										
Total Kjeldahl Nitrogen	BTK0052-BS1	LCS	1.8934	2.0000	mg/L	94.7		85 - 115		
QC Batch ID: BTK0054										
Total Phosphorus	BTK0054-BS1	LCS	0.96690	1.0000	mg/L	96.7		85 - 115		
QC Batch ID: BTK0435										
Ammonia as N	BTK0435-BS1	LCS	1.0003	1.0000	mg/L	100		90 - 110		
QC Batch ID: BTK0743										
Non-Volatile Organic Carbon	BTK0743-BS1	LCS	4.8130	5.0000	mg/L	96.3		85 - 115		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/19/2010 1:24
Project: Hay Road LF
Project Number: 053-7444-07
Project Manager: Kris Johnson

Modified WET Test (STLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BTJ1728		Used client sample: Y - Description: H-3-3.5', 10/13/2010 10:15								
Nitrite as N	DUP	1014406-03	0.84238	0.80043		mg/L	5.1		20	
	MS	1014406-03	0.84238	5.8126	5.2632	mg/L		94.4		90 - 110
	MSD	1014406-03	0.84238	5.8518	5.2632	mg/L	0.7	95.2	20	90 - 110
QC Batch ID: BTJ2078		Used client sample: Y - Description: H-3-3.5', 10/13/2010 10:15								
Chloride	DUP	1014406-03	5.0260	5.0480		mg/L	0.4		20	
	MS	1014406-03	5.0260	110.94	101.01	mg/L		105		80 - 120
	MSD	1014406-03	5.0260	111.03	101.01	mg/L	0.1	105	20	80 - 120
Nitrate as N	DUP	1014406-03	0.068000	0.066000		mg/L	3.0		20	J
	MS	1014406-03	0.068000	5.0828	5.0505	mg/L		99.3		80 - 120
	MSD	1014406-03	0.068000	5.1414	5.0505	mg/L	1.1	100	20	80 - 120
Sulfate	DUP	1014406-03	52.652	52.103		mg/L	1.0		20	
	MS	1014406-03	52.652	159.80	101.01	mg/L		106		80 - 120
	MSD	1014406-03	52.652	159.51	101.01	mg/L	0.2	106	20	80 - 120
QC Batch ID: BTK0052		Used client sample: Y - Description: H-3-3.5', 10/13/2010 10:15								
Total Kjeldahl Nitrogen	DUP	1014406-03	18.934	19.177		mg/L	1.3		20	
	MS	1014406-03	18.934	21.580	2.0000	mg/L		132		80 - 120
	MSD	1014406-03	18.934	21.186	2.0000	mg/L	1.8	113	20	80 - 120
QC Batch ID: BTK0054		Used client sample: Y - Description: H-3-3.5', 10/13/2010 10:15								
Total Phosphorus	DUP	1014406-03	0.092700	0.095500		mg/L	3.0		20	
	MS	1014406-03	0.092700	1.0835	1.0000	mg/L		99.1		80 - 120
	MSD	1014406-03	0.092700	1.0940	1.0000	mg/L	1.0	100	20	80 - 120
QC Batch ID: BTK0435		Used client sample: Y - Description: H-3-3.5', 10/13/2010 10:15								
Ammonia as N	DUP	1014406-03	18.522	18.232		mg/L	1.6		20	
	MS	1014406-03	18.522	40.451	22.222	mg/L		98.7		90 - 110
	MSD	1014406-03	18.522	41.289	22.222	mg/L	2.0	102	20	90 - 110
QC Batch ID: BTK0743		Used client sample: Y - Description: H-3-3.5', 10/13/2010 10:15								
Non-Volatile Organic Carbon	DUP	1014406-03	11.705	9.6700		mg/L	19.0		20	
	MS	1014406-03	11.705	36.000	25.126	mg/L		96.7		80 - 120
	MSD	1014406-03	11.705	35.774	25.126	mg/L	0.6	95.8	20	80 - 120

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 11/19/2010 1:24
Project: Hay Road LF
Project Number: 053-7444-07
Project Manager: Kris Johnson

Notes And Definitions

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected at or above the reporting limit
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference
- A01 PQL's and MDL's are raised due to sample dilution.
- A03 The sample concentration is more than 4 times the spike level.

January 26, 2011

Project No. 093-97458

Greg Pryor
Recology Hay Road Facility
6426 Hay Road
Vacaville, CA 95687

**RE: REPORT OF REMEDIAL ACTIONS
COMPOST HIGH-FLOW AND LOW-FLOW PONDS
RECOLOGY HAY ROAD FACILITY, VACAVILLE, CALIFORNIA**

Dear Mr. Pryor:

Golder Associates Inc. (Golder) is submitting this report summarizing the remedial actions completed for the 5-acre Compost High-Flow Pond and the 0.5-acre Compost Low-Flow Pond at the Recology Hay Road (RHR) Facility. The larger pond serves as the primary storage impoundment for surface water run-off from the composting area. The smaller Low-Flow Pond collects surface water run-off during periods with relatively low discharge to allow more efficient aeration of the stormwater. Water from the Low-Flow Pond is then pumped to the larger High-Flow Pond. During higher precipitation events, surface water is pumped directly to the High-Flow Pond.

During the summer of 2010, a large gas bubble formed in the Compost High-Flow Pond beneath the geomembrane liner. The generation of gas under the liner system posed two problems. First the gas underneath the liner needed to be removed to maintain operation of the pond. Second, the generation of gas beneath the geomembrane needed to be stopped or controlled to prevent a repeat of the situation. The gas generation was attributed to leakage of the organic-rich pond water through the liner. Decomposition of the organics produced gas, resulting in formation of the bubble. To address this situation, the water in the High-Flow Pond was drained, sediment on the liner system was removed, water beneath the liner system was removed, and leaks in the pond geomembrane were repaired. Concurrently, the Low-Flow Pond was also drained, sediment removed, and the geomembrane liner repaired. Following geomembrane repairs, a geoelectric survey was performed on each pond to confirm that all leaks were repaired.

This report summarizes the remedial actions completed, repairs made to the liner systems, and the associated testing that was performed.

1.0 COMPOST HIGH-FLOW AND LOW-FLOW PONDS OVERVIEW

The composting area and associated stormwater management is operated in accordance with the Waste Discharge Requirements (WDRs) Order No. R5-2008-0188. As discussed previously, the larger, 5-acre Compost High-Flow Pond provides the primary containment of surface water run-off from the composting area to the west. The 0.5-acre, Compost Low-Flow Pond is located northwest of the larger Compost High-Flow Pond and collects compost liquids and surface water during low-flow periods to allow more efficient aeration of these liquids prior to discharge to the larger pond. Figure 1 shows the pond locations.

Earlier this year, RHR personnel noted that a gas bubble had formed under the base of the liner in the Compost High-Flow Pond. On April 14, 2010, Golder observed the bubble to measure approximately 200 feet in length by 100 feet in width above the water surface. At that time, Golder personnel also observed a hole below the water level which appeared to be at least one to two inches in diameter along the northeastern side-slope geomembrane liner. Additionally, during a site visit on August 12, 2010, Golder noted that the pond liner contained several holes that appeared to be associated with the anchor penetrations for the pond aerators. The boot seals were observed to be torn at locations along the

n:\projects\2009\093-97458 (norcal-nwshrl 2009 gen serv)\gas bubble investigation\cqa report\09397458 compost pond repair cqa report-final.docx



Golder Associates Inc.
1000 Enterprise Way, Suite 190
Roseville, CA 95678 USA

Tel: (916) 786-2424 Fax: (916) 786-2434 www.golder.com



northeastern side slope and along the southern corner side slope. These defects appear to be the primary source of leakage through the liner.

The Compost High-Flow Pond was constructed with a berm at elevation 35 feet above mean sea level (ft msl) and a flat bottom at elevation 22 ft msl. This pond was designed by Kleinfelder (Compost Area Storm Water Pond Design, Hay Road Landfill, Kleinfelder, September 8, 2006) and constructed in October 2006. The pond liner system includes the following components from bottom to top:

- Subgrade soil
- 10 oz/sy nonwoven geotextile (sideslopes only)
- 80-mil thick, high-density polyethylene (HDPE) geomembrane liner textured on both sides
- 18-inch soil layer (on access ramp only).

The Compost Low-Flow Pond was designed by CH2M Hill (Integrated Stormwater Improvements, Jepson Prairie Composting Facility, CH2M Hill, October 2004) and constructed in 2004. The liner system for this pond is comprised of the following components from bottom to top:

- Subgrade soil
- 60-mil thick, high-density polyethylene (HDPE) geomembrane liner textured on both sides

2.0 REMEDIAL ACTIONS

Recology implemented the remedial actions presented in the "Liner Repair Plan for the Compost Area Storm Water Pond, Recology Hay Road Landfill, Vacaville, California", Golder, September 2010 (Liner Repair Plan). These actions included the following:

- Water was removed from the pond and used for dust control over lined portions of the landfill. Draining the pond required removal of approximately 10 million gallons of liquids through evaporation and dust control.
- Prior to perforating the geomembrane, a landfill gas collection pipe was connected to the underside of the geomembrane liner to minimize the potential for an uncontrolled gas release to the atmosphere.
- An extraction pipe was extended under the side-slope geomembrane liner to remove the majority of water from beneath the liner. This was completed to reduce the hydraulic head acting on the subgrade.
- As of August 12, 2010, the majority of the water was removed exposing a large portion of the bottom geomembrane liner. Approximately 18-inches of water remained in several areas of the pond.
- Extraction of the remaining water under the liner was performed through holes cut in the geomembrane on the pond bottom. The locations of the holes were selected to coincide with proposed subgrade soil sampling points.
- A sump was installed in the northeast corner of the Compost High-Flow Pond to provide a control to remove water under the liner if leakage were to re-occur.
- Once all the water was removed, the liner was visually inspected to identify any damages, leaks, or other areas where the integrity of the liner has been adversely impacted.
- The subgrade was sampled and analytical testing completed to characterize the extent of potential soil impacts beneath the pond liner system and determine whether remediation

of compost stormwater-related constituents in the soils is warranted. The results of the subgrade analytical testing are presented in a separate report.

- All liner repairs and/or replacement were completed by D&E Construction in accordance with the Construction Quality Assurance Plan (Golder, September 2010). All geomembrane materials were installed in accordance with the Project Specifications (Golder, September 2010). Section 3.0 provides additional detail on the CQA completed for the liner repairs.
- A geoelectric leak survey was performed on both the Compost High-Flow Pond and the Compost Low-Flow Pond to confirm that all holes in the geomembrane liners were repaired.

Following the removal of the liquids and the repair of the visible geomembrane defects, Recology removed the remaining sediment on top of the liner.

3.0 CONSTRUCTION QUALITY ASSURANCE

The liner repairs associated with the Compost High-Flow Pond and Compost Low-Flow Pond were performed in accordance with the "Liner Repair Plan for the Compost Area Storm Water Pond, Recology Hay Road Landfill, Vacaville, California", Golder, September 2010. This document also includes the Construction Quality Assurance Plan and the Project Specifications.

The following firms were involved in the repair effort of the Compost High-Flow and Low-Flow Ponds:

- Earthwork associated with the repair of the ponds was performed by the general contractor, Lawler Engineering (Lawler), located in Concord, California.
- Geomembrane repairs were performed by D&E Construction (D&E), located in Visalia, California.
- Supporting laborers were provided by the RHR operations crew.
- Construction Quality Assurance (CQA) was provided by Golder, located in Roseville, California.
- Geoelectric leak location surveys were performed by Leak Location Services, Inc. (LLSI), located in Houston, Texas, under subcontract to Golder.

Golder provided full-time CQA monitoring of the construction activities performed between October 7 and October 21, 2010. The CQA services consisted of observing, testing, and documenting the construction activities to verify compliance with the Technical Specifications. The CQA services included, but were not limited to:

- Observation and documentation of the installation of a sump, including geotextile, gravel, and a riser pipe
- Observation and documentation of the geosynthetics repairs and testing of the field seams for the HDPE geomembrane
- Geoelectric leak location surveys of each pond following repairs to the geomembrane

Golder's CQA technicians observed and documented construction and quality control measures. All CQA activities were completed under Golder's supervision. Mr. Ken Haskell, P.E., provided project supervision as the CQA Engineer-of-Record.

Geomembrane repair locations are shown in Figure 2. Photographs documenting key components and activities of the construction process were taken on a regular basis. Selected photographs are included in Attachment 1. Daily field monitoring reports were prepared throughout the construction to document the

construction and the CQA observation and testing. The field monitoring reports are included in Attachment 2. Summaries of the geomembrane trial welds and geomembrane repairs are included in Attachment 3. The geoelectric leak survey report prepared by LLSI is included in Attachment 4.

Golder confirms that the following key monitoring requirements of the CQA Plan and technical specifications were performed:

- All geomembrane repairs were completed by a geosynthetic installer meeting the requirements outlined in the Technical Specifications.
- Golder provided full-time CQA observation of all liner repairs.
- Trial seam destructive tests were performed on samples prepared at the beginning of each work shift. The tested seam strength and destructive failure modes all passed prior to accepting the trial welds. Golder observed and documented the trial seam testing.
- All seams/patches were non-destructively tested. Extrusion welds conducted on the geomembrane were tested using the vacuum test method.
- Following completion of the repairs, a geoelectric leak survey was completed to verify all liner holes were repaired. The geoelectric leak survey was completed in accordance with the water puddle method (ASTM D7002). All detected holes were repaired and the geoelectric leak survey was repeated to confirm that no holes remained.

The initial geoelectric leak survey detected a large number of holes in each pond. A total of 64 holes were detected in the larger High-Flow Pond, and 43 holes were detected in the smaller Low-Flow Pond. The initial sediment removal was performed using metal shovels, which is attributed to have caused the majority of these defects and is presumably why the WDRs require a geoelectric leak survey any time that sediment is removed from the pond. During the latter portion of the repair effort, RHR staff switched to plastic snow shovels to reduce the geomembrane damage caused by the sediment removal. As indicated above, the geoelectric leak survey was repeated after all detected holes were repaired.

4.0 FUTURE GEOELECTRIC LEAK SURVEYS

The RHR Facility is operated under Waste Discharge Requirements Order R5-2008-0188 (WDRs). Discharge Specification No. 28 of these WDRs require a geoelectric leak location survey on the geomembrane layer of the compost area ponds following the removal of sediment, or at least every five years, beginning in 2012. The geoelectric leak survey completed as part of this liner repair will serve as the first geoelectric survey for the Compost High-Flow Pond and the Compost Low-Flow Pond. The next geoelectric leak survey will occur in another five years (or earlier if sediment is removed from the liner before then).

5.0 CLOSURE

This report documents that the remedial actions for the Compost High-Flow Pond and Compost Low-Flow Pond outlined in our letter dated September 16, 2010 were completed. All repair work was completed in accordance to the September 2010 Liner Repair Plan and the applicable components of WDR Order R5-2008-0188. Additionally, the periodic geoelectric leak location survey was completed in accordance with WDR R5-2008-0188, Discharge Specification No. 28.

Please contact us if you have any questions or require additional information.

Sincerely,

GOLDER ASSOCIATES INC.



Peter E. Bowers, P.E.
Senior Engineer

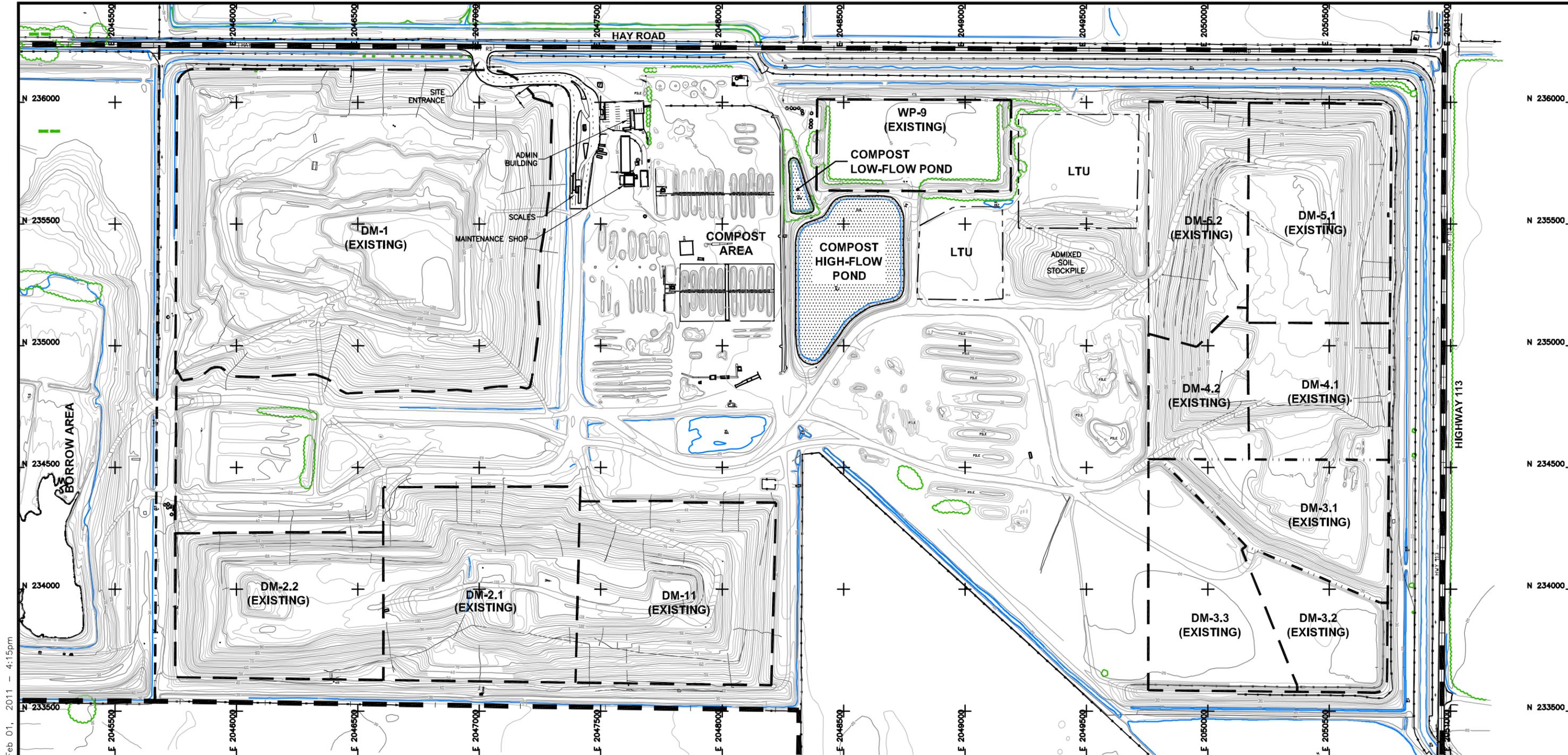


Kenneth G. Haskell, P.E.
Principal/Practice Leader

Attachments:

- Figure 1: Site Plan
- Figure 2: Compost Area Ponds Repair Plan
- Attachment 1: Construction Photographs
- Attachment 2: Daily CQA Monitoring Reports
- Attachment 3: Geosynthetic Monitoring Summaries
- Attachment 4: Geoelectric Leak Survey Report

FIGURES

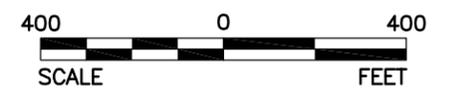


Drawing file: 09397458 RHR CP SitePlan-Fig1.dwg Feb 01, 2011 - 4:15pm

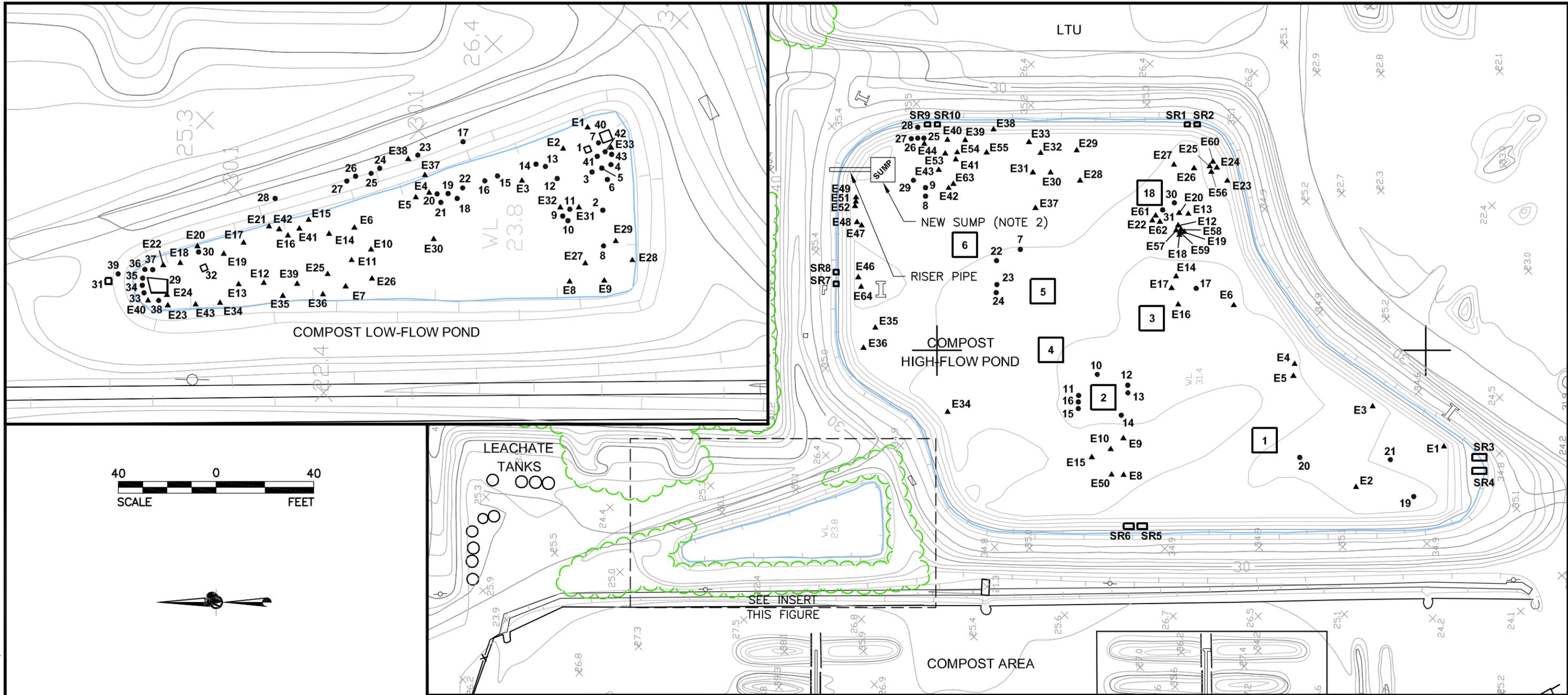
NOTE

1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY AERO GEODETIC CORP. DATES OF PHOTOGRAPHY: MAY 5, 2010.

LEGEND	
	PROPERTY BOUNDARY
	PARCEL BOUNDARY
	DISPOSAL MODULE BOUNDARY
	LIMIT OF CONSTRUCTION
	CONSTRUCTION AREA



**FIGURE 1
SITE PLAN
RECOLOGY HAY ROAD COMPOST PONDS REMEDIATION**

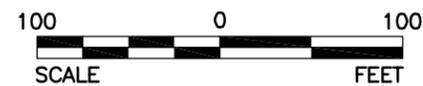


NOTE

1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY AERO GEODETIC CORP. DATES OF PHOTOGRAPHY: MAY 5, 2010. TOPOGRAPHY MODIFIED IN COMPOST HIGH-FLOW POND TO SHOW CONTOURS BELOW WATER LEVEL.
2. IN THE COMPOST HIGH-FLOW POND, A 25 FT x 25 FT SUMP WAS INSTALLED BENEATH THE GEOMEMBRANE. ADDITIONALLY, AN 8-IN. DIA., SDR 17, HDPE RISER PIPE EXTENDS FROM THE SUMP GRAVEL TO THE TOP OF SLOPE. THE SUMP GRAVEL IS WRAPPED IN GEOTEXTILE.

LEGEND

- SR-5 REPAIR PATCH
- 8 REPAIR BEAD
- ▲ E1 REPAIR LOCATION AND ID FOR DEFECTS LOCATED USING GEOELECTRIC SURVEY METHOD
- 1 SUBGRADE SAMPLE LOCATION AND REPAIR ID



**FIGURE 2
COMPOST AREA PONDS REPAIR PLAN
RECOLOGY HAY ROAD**

**ATTACHMENT 1
PROJECT PHOTOGRAPHS**



Photo 1: High-flow compost pond bubble with aerator in foreground.



Photo 2: Subgrade sample location.

FIGURE **A-1**
PROJECT PHOTOGRAPHS
RHR COMPOST PONDS REPAIR CQA



Photo 3: 25-foot by 25-foot sump installed in northeast corner.



Photo 4: Sump riser pipe.

FIGURE **A-2**
PROJECT PHOTOGRAPHS
RHR COMPOST PONDS REPAIR CQA



Photo 5: Extrusion welding geomembrane patch.



Photo 6: Vacuum testing geomembrane patch.

FIGURE **A-3**
PROJECT PHOTOGRAPHS
RHR COMPOST PONDS REPAIR CQA



Photo 7: Geoelectric leak location survey using Water Puddle method on floor.



Photo 8: Geoelectric leak location survey using Water Puddle method on slopes.

FIGURE **A-4**
PROJECT PHOTOGRAPHS
RHR COMPOST PONDS REPAIR CQA

ATTACHMENT 2
DAILY CQA MONITORING REPORTS

DAILY PROGRESS REPORT

PROJECT NAME: COMPOST POND REPAIR COA - @ RHP
PROJECT NUMBER: 093-97459

DAY: THURSDAY DATE: 10/7/10 SHIFT: Day
REPORT BY: MAW CONTRACTOR: _____ WEATHER: WINDY, 77°F
PRECIPITATION (LAST 24 HRS): N/A

CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: EXCAVATOR 290LC-3, BACKHOE 416E, DUMP TRUCK 1889,

WORK ACCOMPLISHED THIS DATE:

0945 ARRIVE ONSITE
CREW ONSITE SANDBAGGING AREA AROUND DEFECTS TO BLOCK
OFF WATER
KELLY - MAKING ADDITIONAL PERFORATIONS IN 8-IN PIPE PER CHRIS

1015 EXCAVATOR 290LC-3 BEGINS DIGGING REMAINDER OF SUMP AREA

1145 KELLY, ANTHONY & CHARLIE BEGIN LAYING FABRIC IN SUMP

1245 BACKHOE 416E BEGINS MOVING GRAVEL FROM STOCKPILE IN
PARKING AREA TO EDGE OF POND ABOVE SUMP
EXCAVATOR 290LC-3 MOVES GRAVEL FROM TOP OF SLOPE TOWARD
INTO SUMP AREA

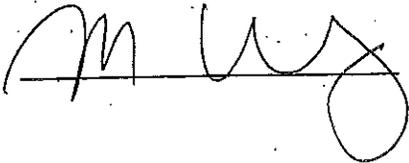
1330 BACKHOE 416E BRINGS CLEAN BORROW SOIL TO BE BACKFILLED
ON THE SLOPE OVER PIPE

1415 CHARLIE BEGINS TO USE JACK HAMMER MX-70 TO COMPACT SOIL
OVER PIPE

1430 DUMP TRUCK #1889 ARRIVES WITH 2 LOADS OF PEA GRAVEL
EXCAVATOR 290LC-3 MOVES GRAVEL

1545 SUMP COMPLETED -

Signature: _____



Date: _____

10/7/10

SENT:
4
16

MAW

DAILY PROGRESS REPORT

PROJECT NAME: RHR COMPOST POND REPAIRS COA
PROJECT NUMBER: 093-97459

DAY: FRIDAY DATE: 10/8/10 SHIFT: Day
REPORT BY: MAW CONTRACTOR: D&E WEATHER: WINDY, WARM 80°F
PRECIPITATION (LAST 24 HRS): N/A

CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: _____

WORK ACCOMPLISHED THIS DATE:

0830 ARRIVE ON SITE

SUMP IS DE-CONSTRUCTED, WHEN PUMPING OUT REPAIR AREAS, PUMP WAS NOT WORKING CORRECTLY & SUMP OVERFILLED, HAS A SUMP PUMP SITTING IN GRAVEL

D&E ON SITE & STARTS REPAIRING

CALLED TO CHECK IN WITH KEN TO GET APPROVAL FOR PLACING GEOTEXTILE UNDERNEATH LINER TO HELP ELEVATE THE REPAIR AREA IN ORDER TO REPAIR, KEN APPROVED.

1300 HUGH ON SITE TO TRAIN & TAKE OVER COA WORK FOR REMAINDER OF DAY

1600 WORK DONE FOR DAY.

Signature: _____



Date: _____

10/8/10

DAILY PROGRESS REPORT

PROJECT NAME: RECOLOGY HAY ROAD LEACHATE POND LINER REPAIR
PROJECT NUMBER: 093-97459.

DAY: FRIDAY DATE: 10/8/2010 SHIFT: Day
REPORT BY: H. DAVIES CONTRACTOR: D&E WEATHER: WINDY, WARM, 86°F.
PRECIPITATION (LAST 24 HRS): N/A.

CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: _____

WORK ACCOMPLISHED THIS DATE:

13:00 ARRIVE ON SITE; SIGN IN AND MEET MELANIE WONG AT OFFICES.
MOVE TO LEACHATE POND WHERE REPAIR CREW HAVE JUST
RETURNED FROM LUNCH BREAK.

13:55 MELANIE OFF SITE.

16:00 GOLDER OFF SITE AS REPAIR CREW COMPLETED ALL POSSIBLE
REPAIRS - REMAINING AREAS REQUIRE FURTHER WATER
REMOVAL / PUMPING.

Signature: _____

Date: 11/4/2010.

DAILY PROGRESS REPORT

PROJECT NAME: RIP COMPOST POND REPAIRS COA
PROJECT NUMBER: 093-97959

DAY: Monday DATE: 10/11/10 SHIFT: Day
REPORT BY: MW CONTRACTOR: D & E WEATHER: SUNNY
PRECIPITATION (LAST 24 HRS): N/A

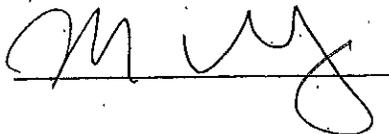
CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: _____

WORK ACCOMPLISHED THIS DATE:

0800 ARRIVE ONSITE
0830 CALLED D & E FOR AN ETA
DENNIS KENNEDY ONSITE WITH NO OPEN
CONDUCTED SITE WALK - ALL DEFECTS ARE CLEARED & READY
FOR D & E TO REPAIR
TOOK MEASUREMENTS OF REMAINING DEFECTS
1000 D & E ONSITE
BEGINS WITH SUMP
RE-CONSTRUCT SUMP
1130 CONDUCT TRIAL SEAMS TO BEGIN REPAIRS
1215 BEGIN PATCHING ON SLOPES
1700 WORK ENDS FOR DAY
CALLED KEN TO CHECK IN
CALLED HEATHER TO CHECK IN

Signature: _____



Date: _____

10/11/10

DAILY PROGRESS REPORT

PROJECT NAME: PHR- COMPOST POND REPAIRS COA
PROJECT NUMBER: 093-97459

DAY: TUESDAY DATE: 10/12/10 SHIFT: Day
REPORT BY: MAW CONTRACTOR: D&E WEATHER: SWANNY, WINDY, 80°F
PRECIPITATION (LAST 24 HRS): N/A

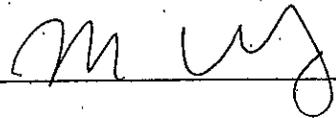
CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: _____

WORK ACCOMPLISHED THIS DATE:

0700 ON SITE, BEGIN WORK
0800 TRIAL SEAMS ARE CONDUCTED
GEOTEXTILE IS PLACED IN ALL REPAIR LOCATIONS
1100 REPAIRS COMPLETE
VACUUM TESTS COMPLETE
1200 WORK COMPLETE FOR DAY WITH D&E
FOUND HOLES IN LOW FLOW POND
CALLED CHRIS JOHNSON TO SEE IF WANTS TO CONDUCT SOIL SAMPLING
CALLED KEN TO LET HIM KNOW ABOUT ADDITIONAL REPAIRS
GOLDER OFF SITE

Signature: _____



Date: _____

10/12/10

DAILY PROGRESS REPORT

PROJECT NAME: PHR COMPOST POND REPAIRS COA
PROJECT NUMBER: 093-97459

DAY: FRIDAY DATE: 10/15/10 SHIFT: Day
REPORT BY: MAW CONTRACTOR: D&E WEATHER: SUNNY, 90°F
PRECIPITATION (LAST 24 HRS): N/A

CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: _____

WORK ACCOMPLISHED THIS DATE:

0730 COLDER ON SITE

D&E ALREADY BEGAN WORK IN COMPOST POND
CALLED KEN TO VERIFY THESE DEFECTS SHOULD BE COMPLETED
CONDUCTED SITE WALK ON LOW FLOW POND

1100 BEGIN WORK IN SMALL POND

COULDN'T TELL IF THERE IS A LEAK UNDERNEATH HDPE PIECE IN
SOUTHEAST CORNER OF POND, CALLED KEN TO SEE IF STILL
NEEDED PIECE IN POND OR IF COULD TAKE OUT TO VERIFY IF
THERE WERE ANY DEFECTS

1145

CHARL TAYLOR ON SITE, WANTS HDPE PIECE TAKEN OUT
GREEN CLEANING THE SLUDGE BEGINS TO TAKE OUT WATER
FROM SOUTHEAST CORNER

1400

~~D&E~~ KELLY ON SITE WITH PUMP TO CLEAN OUT AREA FOR REPAIRS

1700

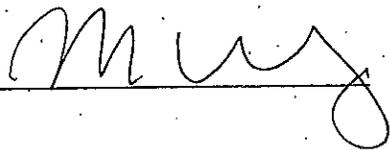
WORK DONE FOR DAY

ALL REPAIRS COMPLETE

CALLED TO CHECK IN WITH KEN + HEATHER

HDPE PIECE IS A FLAT STOCK APPROXIMATELY 1/2" x 5' x 5' IN SIZE.
THE HDPE PIECE WAS LOCATED IN THE SOUTHEAST CORNER
OF THE LOW FLOW POND.

Signature: _____



Date: _____

10/15/10

FIELD MONITORING REPORT

PAGE ONE OF ONE

PROJECT NUMBER: 093-97458

PROJECT TITLE: Compost Pond CQA

OWNER: Recology

CONTRACTOR: D&E Construction

LOCATION: Recology Hay Road Facility

DATE

10/18/2010

S (M) T W T F S

THE FOLLOWING WAS NOTED:

- GOLDER ON SITE AT 06:45 AND MET THANE HEFLEY (LLSI) AT OFFICES.
OVERNIGHT RAIN MEANT SURVEY COULD NOT BE STARTED ON THE WET/POOLED
WATER MEMBRANE. LABORERS WERE USED TO BRUSH WATER OUT FROM POOLS
AND ACCELERATE EVAPORATION.
- SURVEY STARTED AT APPROXIMATELY 11:05 AM. TWO LABORERS WERE USED
TO HOLD HOSE/ELECTRICAL CABLE. SURVEY BEGAN AT THE SOUTHERN END
OF THE POND (BASE OF RAMP) AND WORKED FROM EAST-WEST PASSES
MOVING NORTH.
- LUNCH BREAK FROM 11:55 AM. THANE OFF-SITE UNTIL 13:15. LABORERS HAD
HALF-HOUR BREAK AND CONTINUED TO REMOVE SURFACE WATER ON RETURN.
- SURVEY CONTINUED WITH WATER TRUCK MOVING NORTH ALONG EASTERN WALL
AT APPROXIMATELY 3:00 PM DUE TO HOSE LENGTH RESTRICTIONS FROM SOUTH END.
- SURVEYING FINISHED FOR DAY AT 4:00 PM AS SURFACE WATER WAS TOO
WIDESPREAD IN THE AREA TO BE COVERED FOR ACCURATE DETERMINATION
OF ANY LEAKS/HOLES. LABORERS CONTINUED TO DISPERSE SURFACE WATER
UNTIL THE END OF THE DAY.
- GOLDER OFF SITE AT 16:20.
- SUMMARY OF SURVEY: SIX HOLES IDENTIFIED AND MARKED WITH COLORED PAINT.
ESTIMATED 1/3 TO 1/2 OF AREA COVERED ON POND FLOOR.

SUBMITTED BY GOLDER



HUGH DAVIES.

MONITOR

DAILY PROGRESS REPORT

PROJECT NAME: RHP COMPOST POND COA
PROJECT NUMBER: 093-97458

DAY: TUESDAY DATE: 10/19 SHIFT: Day
REPORT BY: MAW CONTRACTOR: LSI WEATHER: SWANNY
PRECIPITATION (LAST 24 HRS): N/A

CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: _____

WORK ACCOMPLISHED THIS DATE:

0715 ARRIVE ON SITE

0745 CONDUCTED SITE WALK OF SMALL POND WITH THANE (LSI)

WATER TRUCK ON SITE, SETTING UP HOSES

0845 CHRIS TAYLOR ON SITE - WANTED TO KNOW IF D & E CAN DO REPAIRS
SIMULTANEOUSLY AND IF RESURVEY OF REPAIRED AREAS NEED TO BE
CONDUCTED.

LSI SCHEDULE: APPROXIMATELY 2 MORE DAYS

KEN SAID YES TO RESURVEY

0930 VERIFIED WITH THANE THAT D & E CAN COME ON THURSDAY

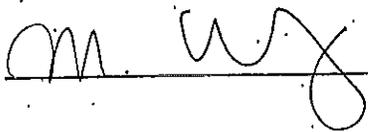
LEFT CHRIS TAYLOR A MESSAGE REGARDING D & E SCHEDULE

1200 MOVED TO LOW FLOW POND

1430 DONE WITH LOW FLOW POND

CONFIRMED D & E ON SITE THURSDAY 9-8:30

Signature: _____



Date: _____

10/19/10

DAILY PROGRESS REPORT

PROJECT NAME: RHR COMPOST POND REPAIRS COA
PROJECT NUMBER: 093-97458

DAY: WEDNESDAY DATE: 10/20 SHIFT: Day
REPORT BY: MAN CONTRACTOR: LSI WEATHER: SUNNY, WINDY
PRECIPITATION (LAST 24 HRS): N/A

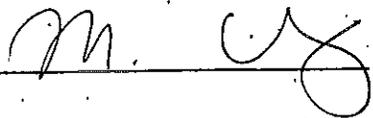
CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: _____

WORK ACCOMPLISHED THIS DATE:

0700 ON SITE
THANE DOCUMENTING REPAIRS / DEFECTS FROM 10/19 WHILE WAITING
FOR CREW TO FINISH REMOVING SLUDGE & WATER
WATER TRUCK ON SITE - SETTING UP
0900 BEGIN SURVEYING REMAINDER OF COMPOST POND
1400 FINISH SURVEY
1430 CHECKED IN WITH KEN
THANE DOCUMENTING LOCATIONS OF DEFECTS
GOLDER OFF SITE

Signature: _____



Date: _____

10/20

DAILY PROGRESS REPORT

PROJECT NAME: RHP COMPOST POND REPAIRS COA
PROJECT NUMBER: 013-97458

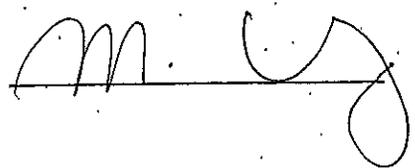
DAY: THURSDAY DATE: 10/21 SHIFT: Day
REPORT BY: MAW CONTRACTOR: LLSI WEATHER: cloudy
PRECIPITATION (LAST 24 HRS): N/A

CONTRACTORS WORKFORCE: _____

CONTRACTORS EQUIPMENT: _____

WORK ACCOMPLISHED THIS DATE:

0715 ON SITE
THANE SETUP EQUIPMENT FOR SLOPES SURVEY
0800 BEGIN SURVEY ON SLOPES
0900 CALLED D+E FOR ETA
1030 D+E ON SITE
WATER TRUCK MOVED TO FINISH SLOPE SURVEY
1100 D+E BEGINS REPAIRS IN LOW FLOW POND
THANE SLOPES SURVEY COMPLETE
1400 D+E DONE IN LOW FLOW POND
THANE BEGINS RESURVEY - FOUND 2 ADDITIONAL DEFECTS
1500 BEGINS RESURVEY IN COMPOST POND - FOUND ADDITIONAL 4 DEFECTS
D+E FOUND ADDITIONAL DEFECTS
1700 RESURVEY IN LOW FLOW POND
1800 DONE W/BOTH PONDS
EFC CHECKED IN WITH CHRIS TAYLOR & FEN

Signature: 

Date: 10/21/10

ATTACHMENT 3
GEOSYNTHETIC MONITORING SUMMARIES

**TABLE 3-1
PRIMARY GEOMEMBRANE TRIAL SEAM SUMMARY
RECOLOGY HAY ROAD, COMPOST PONDS LINER
VACAVILLE, CALIFORNIA
093-97458**

Trial Seam Number	Date 2010	Approx. Time	Machine Number	Seam Type (1)	Weld Tech (2)	Machine Speed ft/min	Machine Temp. (F°)	Seam Strength (ppi)			Pass/Fail	Monitor (3)
								Inside Peel	Outside Peel	Shear		
TX-1	10/8	1000	MX-83	EXT	JP	520	420	133		228	P	MAW
								175		237		
TX-2	10/8	1305	MX-83	EXT	JP	511	420	140		215	P	MAW
								127				
TX-1	10/11	1126	MX-55	EXT	IC	535	250	121		217	P	MAW
								121		218		
TX-2	10/11	1340	MX-55	EXT	ET	330	250	138		189	P	MAW
								123		183		
TX-1	10/12	0753	MX-144	EXT	IC	530	250	147		231	P	MAW
								136		227		
TX-2	10/12	0800	MX-55	EXT	ET	530	250	146		233	P	MAW
								140				
TX-1	10/15	0814	MX-52	EXT	AC	521	400	178		274	P	MAW
								185		270		
TX-2	10/15	1302	MX-52	EXT	AC	501	400	148		194	P	MAW
								145		219		
TX-1	10/21	1031	MX-55	EXT	AC	525	400	145		285	P	MAW
								154		288		
TX-2	10/21	1402	MX-55	EXT	AC	525	400	126		180	P	MAW
								128		180		

Notes:

- (1) EXT = Extrusion weld
- (2) D&E Construction welding technicians
- (3) Golder CQA Monitors

**TABLE 3-2
PRIMARY GEOMEMBRANE DEFECT & REPAIR SUMMARY
RECOLOGY HAY ROAD, COMPOST PONDS LINER
VACAVILLE, CALIFORNIA
093-97458**

Repair Number	Compost Pond (CP) or Low-Flow Pond (LF)	Repair Location	Defect Type	Log Date 2010	CQA Monitor	Repair Type	Repair Date 2010	Test Date 2010
1A	CP Repair 1	55' N OF S TOE	SSP	10/8	MAW	P	10/8	10/8
1B	CP Slope Repair 1	272' S OF N TOE, 15' E OF W TOE	PR	10/8	MAW	P	10/8	10/8
1C	CP Slope Repair 2	279' S OF N TOE, 15' E OF W TOE	PR	10/8	MAW	P	10/8	10/8
1D	CP Repair 2	88' S OF N TOE, 270' E OF W TOE	SSP	10/8	MAW	P	10/8	10/8
1E	CP Repair 3	184' S OF N TOE, 122 E OF W TOE	SSP	10/8	MAW	P	10/8	10/8
1F	CP Repair 4	89' S OF REPAIR 3, 30' W OF REPAIR 3	SSP	10/8	MAW	P	10/8	10/8
1G	CP Repair 5	32' E OF REPAIR 4, 0' N OF REPAIR 4	SSP	10/8	MAW	P	10/8	10/8
1H	CP Repair 6	55' S OF N TOE, 405' W OF E TOE	SSP	10/8	MAW	P	10/8	10/8
1I	CP Repair 7	47' S OF REPAIR 6, 6' W OF REPAIR 6	D	10/8	MAW	B	10/8	10/8
1J	CP Repair 8	80' W OF E TOE, 136' S OF N TOE	D	10/8	MAW	B	10/8	10/8
1K	CP Repair 9	79' W OF E TOE, 136' S OF N TOE	D	10/8	MAW	B	10/8	10/8
1M	CP Repair 10	20' W OF PATCH 2, 0' N OF PATCH 2	D	10/8	MAW	B	10/8	10/8
1N	CP Repair 11	1' E OF PATCH 2, 18' N OF PATCH 2	D	10/8	MAW	B	10/8	10/8
1P	CP Repair 12	15' E OF PATCH 2, 15' S OF PATCH 2	D	10/8	MAW	B	10/8	10/8
1Q	CP Repair 13	1' E OF PATCH 1, 20' S OF PATCH 2	D	10/8	MAW	B	10/8	10/8
1R	CP Repair 14	9' W OF PATCH 2, 18' S OF PATCH 2	D	10/8	MAW	B	10/8	10/8
1S	CP Repair 15	10' W OF REPAIR 11, 0' N OF REPAIR 11	D	10/8	MAW	B	10/8	10/8
1T	CP Repair 16	2' E OF REPAIR 11, 0' N OF REPAIR 11	D	10/8	MAW	B	10/8	10/8
1W	CP Repair 17	114' W OF E TOE, 50' N OF S TOE	D	10/8	MAW	B	10/8	10/8
2A	CP Repair 18	63' N OF S TOE, 69' W OF E TOE	SSP	10/11	MAW	B	10/11	10/11
2B	CP Slope Repair 3	29' S OF N TOE, 46'	PR	10/11	MAW	P	10/11	10/11
2C	CP Slope Repair 4	28' S OF N TOE, 53'	PR	10/11	MAW	P	10/11	10/11
2D	CP Repair 19	14' S OF N TOE, 27' W OF E TOE	EE	10/11	MAW	B	10/11	10/11
2E	CP Repair 20	146' S OF N TOE, 27' W OF E TOE	EE	10/11	MAW	P	10/11	10/11
2F	CP Sump Repair 1	SE CORNER	T	10/11	MAW	P	10/11	10/11
2G	CP Sump Repair 2	SE CORNER	T	10/11	MAW	P	10/11	10/11
2H	CP Sump Repair 3	SE CORNER	T	10/11	MAW	P	10/11	10/11
2I	CP Sump Repair 4	SW CORNER	T	10/11	MAW	P	10/11	10/11
2J	CP Sump Repair 5	SW CORNER	T	10/11	MAW	P	10/11	10/11
2K	CP Sump Repair 6	SW CORNER	T	10/11	MAW	P	10/11	10/11
2M	CP Sump Repair 7	NE CORNER	T	10/11	MAW	P	10/11	10/11
2N	CP Sump Repair 8	NW CORNER	T	10/11	MAW	P	10/11	10/11
2P	CP Sump Repair 9	WHOLE SUMP PANEL	SUMP	10/11	MAW	P	10/11	10/11
2Q	CP Sump Repair 10	NW CORNER	T	10/11	MAW	P	10/11	10/11
2R	CP Sump Repair 11	UP SLOPE	D	10/11	MAW	CAP	10/11	10/11
2S	CP Sump Repair 12	UP SLOPE	D	10/11	MAW	CAP	10/11	10/11
2T	CP Sump Repair 13	UP SLOPE	D	10/11	MAW	CAP	10/11	10/11
2W	CP Sump Repair 14	TOP OF SLOPE	D	10/11	MAW	P	10/11	10/11
3A	CP Slope Repair 5	314' N OF S TOE, 15' W OF W TOE	PR	10/12	MAW	P	10/12	10/12
3B	CP Slope Repair 6	324' N OF S TOE, 15' W OF W TOE	PR	10/12	MAW	P	10/12	10/12
3C	CP Slope Repair 7	159' W OF E TOE, 14' N OF S TOE	PR	10/12	MAW	P	10/12	10/12
3D	CP Slope Repair 8	159' W OF E TOE, 14' N OF S TOE	PR	10/12	MAW	P	10/12	10/12
3E	CP Slope Repair 9	73' S OF N TOE, 20' E OF W TOE	PR	10/12	MAW	P	10/12	10/12
3F	CP Slope Repair 10	83' S OF N TOE, 20' E OF W TOE	PR	10/12	MAW	P	10/12	10/12
3G	CP Repair 21	61' E OF W TOE, 21' N OF S TOE	EE	10/12	MAW	P	10/12	10/12
3H	CP Pipe Boot	TOP OF SLOPE	EE	10/12	MAW	P	10/12	10/12
3I	CP Sump Repair 15	TOP OF SLOPE	EE	10/12	MAW	P	10/12	10/12
4A	CP Repair 22	40' W OF REPAIR 24	EE	10/15	MAW	B	10/15	10/15
4B	CP Repair 23	40' W OF REPAIR 24	EE	10/15	MAW	B	10/15	10/15
4C	CP Repair 24	10' N OF REPAIR 7	EE	10/15	MAW	B	10/15	10/15
4D	CP Repair 25	ALONG TOE OF SLOPE, 50' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
4E	CP Repair 26	ALONG TOE OF SLOPE, 50' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
4F	CP Repair 27	ALONG TOE OF SLOPE, 52' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
4G	CP Repair 28	2' UP SLOPE, 70' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
4H	CP Repair 29	100' S OF N TOE, 69' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
4I	CP Repair 30	56' N OF S TOE, 90' W OF E TOE	EE	10/15	MAW	P	10/15	10/15
4J	CP Repair 31	58' N OF S TOE, 89' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
4K	CP Repair 32	67' N OF S TOE, 88' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
4M	LF Repair 1	11' N OF TOE, 2' W OF E TOE	EE	10/15	MAW	P	10/15	10/15
4N	LF Repair 2	3' N OF S TOE, 14' W OF E TOE	EE	10/15	MAW	P	10/15	10/15

Repair Number	Compost Pond (CP) or Low-Flow Pond (LF)	Repair Location	Defect Type	Log Date 2010	CQA Monitor	Repair Type	Repair Date 2010	Test Date 2010
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4P	LF Repair 3	3.5' N OF S TOE, 12' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
4Q	LF Repair 4	3.5' N OF S TOE, 12' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
4R	LF Repair 5	3.5' N OF S TOE, 12' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
4S	LF Repair 6	3.5' N OF S TOE, 12' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
4T	LF Repair 7	9' W OF E TOE, 7.5' N OF S TOE	EE	10/15	MAW	B	10/15	10/15
4W	LF Repair 8	58.5' W OF E TOE, 8' N OF S TOE	EE	10/15	MAW	B	10/15	10/15
4X	LF Repair 9	19.5' W OF E TOE, 29.5' N OF S TOE	EE	10/15	MAW	B	10/15	10/15
5A	LF Repair 10	19.5' W OF E TOE, 29.5' N OF S TOE	EE	10/15	MAW	B	10/15	10/15
5B	LF Repair 11	19.5' W OF E TOE, 29.5' N OF S TOE	EE	10/15	MAW	B	10/15	10/15
5C	LF Repair 12	6.5' W OF E TOE, 47.5' N OF S TOE	EE	10/15	MAW	B	10/15	10/15
5D	LF Repair 13	65' N OF S TOE, 10' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
5E	LF Repair 14	1' W OF E TOE, 118' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5F	LF Repair 15	2' W OF E TOE, 112' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5G	LF Repair 16	2' W OF E TOE, 111' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5H	LF Repair 17	4.5' UP SLOPE, 96' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5I	LF Repair 18	12.5' W OF E TOE, 72' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5J	LF Repair 19	2' W OF E TOE, 64.5' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5K	LF Repair 20	3' W OF E TOE, 62.5' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5M	LF Repair 21	7.5' W OF E TOE, 59' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5N	LF Repair 22	1' W OF E TOE, 63.5' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5P	LF Repair 23	13.5' UPSLOPE, 71' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
5Q	LF Repair 24	23' N OF S TOE, 15' UPSLOPE	EE	10/15	MAW	B	10/15	10/15
5R	LF Repair 25	20.5' N OF LF REPAIR 23, 15.5' UPSLOPE	EE	10/15	MAW	B	10/15	10/15
5S	LF Repair 26	24' N OF LF REPAIR 23, 15.5' UPSLOPE	EE	10/15	MAW	B	10/15	10/15
5T	LF Repair 27	25' N OF LF REPAIR 23, 15.5' UPSLOPE	EE	10/15	MAW	B	10/15	10/15
5W	LF Repair 28	14' S OF N TOE, 13.5' UPSLOPE	EE	10/15	MAW	B	10/15	10/15
5X	LF Repair 29	UP N SLOPE	EE	10/15	MAW	P	10/15	10/15
6A	LF Repair 30	18' S OF N TOE, 12.5' UPSLOPE	EE	10/15	MAW	B	10/15	10/15
6B	LF Repair 31	4.5' S OF N TOE, 6' W OF E TOE	EE	10/15	MAW	P	10/15	10/15
6C	LF Repair 32	6' S OF TOP SLOPE	EE	10/15	MAW	P	10/15	10/15
6D	LF Repair 33	9' S OF N TOE, 13.5' W OF E TOE	EE	10/15	MAW	B	10/15	10/15
6E	LF Repair 34	12.5' W OF E TOE, 9' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
6F	LF Repair 35	11.5' W OF E TOE, 9' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
6G	LF Repair 36	10.75' W OF E TOE, 9' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
6H	LF Repair 37	11.5' W OF E TOE, 8' S OF N TOE	EE	10/15	MAW	B	10/15	10/15
6I	LF Repair 38	4.5' UP SLOPE, 7' E OF W TOE	EE	10/15	MAW	B	10/15	10/15
6J	LF Repair 39	TOP OF SLOPE, 2' W OF E EDGE	EE	10/15	MAW	P	10/15	10/15
6K	LF Repair 40	N CORNER	EE	10/15	MAW	P	10/15	10/15
6M	LF Repair 41	4.5' W OF E TOE, TOE OF S SLOPE	EE	10/15	MAW	B	10/15	10/15
6N	LF Repair 42	4.5' W OF E TOE, 2.5' N OF S TOE	EE	10/15	MAW	B	10/15	10/15
6P	LF Repair 43	4.5' W OF E TOE, 2' N OF S TOE	EE	10/15	MAW	B	10/15	10/15
7A	LLSI LF Repair 1	8' N OF S TOE, ALONG E TOE	EE	10/19	MAW	B	10/21	10/21
7B	LLSI LF Repair 2	27.5' N OF S TOE, 6' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7C	LLSI LF Repair 3	39' N OF S TOE, 16' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7D	LLSI LF Repair 4	86' N OF S TOE, 4.5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7E	LLSI LF Repair 5	89.5' N OF S TOE, 5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7F	LLSI LF Repair 6	124' N OF S TOE, 4.5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7G	LLSI LF Repair 7	59' S OF N TOE, 7' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
7H	LLSI LF Repair 8	50' N OF S TOE, 5.5' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
7I	LLSI LF Repair 9	12' N OF S TOE, 8' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7J	LLSI LF Repair 10	73' S OF N TOE, 12.5' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
7K	LLSI LF Repair 11	65.5' S OF N TOE, 13' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
7M	LLSI LF Repair 12	32' S OF N TOE, 14' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
7N	LLSI LF Repair 13	27' S OF N TOE, 8' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
7P	LLSI LF Repair 14	127' N OF S TOE, 7' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7Q	LLSI LF Repair 15	138' N OF S TOE, 1' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7R	LLSI LF Repair 16	14.4' N OF S TOE, 8' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7S	LLSI LF Repair 17	174' N OF S TOE, 2' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
7T	LLSI LF Repair 18	179' N OF S TOE, 2' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7W	LLSI LF Repair 19	176' N OF S TOE, 2.5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
7X	LLSI LF Repair 20	177' N OF S TOE, 1' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
8A	LLSI LF Repair 21	168' N OF S TOE, ALONG E TOE	EE	10/19	MAW	B	10/21	10/21
8B	LLSI LF Repair 22	192' N OF S TOE, 0.5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
8C	LLSI LF Repair 23	ALONG N TOE, 2' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
8D	LLSI LF Repair 24	4' N OF N TOE, 6' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
8E	LLSI LF Repair 25	59' S OF N TOE, 12' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
8F	LLSI LF Repair 26	61.5' S OF N TOE, 8' E OF W TOE	EE	10/19	MAW	B	10/21	10/21

Repair Number	Compost Pond (CP) or Low-Flow Pond (LF)	Repair Location	Defect Type	Log Date 2010	CQA Monitor	Repair Type	Repair Date 2010	Test Date 2010
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8G	LLSI LF Repair 27	24' N OF E TOE, 11.5' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
8H	LLSI LF Repair 28	ALONG S TOE	EE	10/19	MAW	B	10/21	10/21
8I	LLSI LF Repair 29	4' N OF S TOE, 18' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
8J	LLSI LF Repair 30	100.5' N OF S TOE, 18' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
8K	LLSI LF Repair 31	14' N OF S TOE, 33.5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
8M	LLSI LF Repair 32	17' N OF S TOE, 33' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
8N	LLSI LF Repair 33	ALONG S TOE, 15' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
8P	LLSI LF Repair 34	25' S OF 1 TOE, 1' UP W SLOPE	EE	10/19	MAW	B	10/21	10/21
8Q	LLSI LF Repair 35	40' S OF N TOE, ALONG W TOE	EE	10/19	MAW	B	10/21	10/21
8R	LLSI LF Repair 36	50' S OF N TOE, 1' UP W SLOPE	EE	10/19	MAW	B	10/21	10/21
8S	LLSI LF Repair 37	93' S OF N TOE, 6' UP W SLOPE	CR	10/21	MAW	B	10/21	10/21
8T	LLSI LF Repair 38	90' S OF N TOE, ALONG TOP OF W SLOPE	CR	10/21	MAW	B	10/21	10/21
8W	LLSI LF Repair 39	41' S OF N TOE, 1' E OF W TOE	CR	10/21	MAW	B	10/21	10/21
8X	LLSI LF Repair 40	4' N OF N TOE, 5' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
9A	LLSI LF Repair 41	56' S OF N TOE, 2' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
9B	LLSI LF Repair 42	49.5' OF N TOE, 1.5' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
9C	LLSI LF Repair 43	6' S OF N TOE, 2' E OF W TOE	EE	10/21	MAW	B	10/21	10/21
10A	LLSI CP Repair 1	4' N OF S TOE, 13' W OF E TOE	EE	10/18	HD	B	10/21	10/21
10B	LLSI CP Repair 2	133' N OF S TOE, 44' E OF W TOE	EE	10/18	HD	B	10/21	10/21
10C	LLSI CP Repair 3	36' N OF S TOE, 22' W OF E TOE	EE	10/18	HD	B	10/21	10/21
10D	LLSI CP Repair 4	23' N OF S TOE, 28' W OF E TOE	EE	10/18	HD	B	10/21	10/21
10E	LLSI CP Repair 5	27' N OF S TOE, 42' W OF E TOE	EE	10/18	HD	B	10/21	10/21
10F	LLSI CP Repair 6	55' N OF S TOE, 132' W OF E TOE	EE	10/18	HD	B	10/21	10/21
10G	LLSI CP Repair 7	248' N OF S TOE, 260' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
10H	LLSI CP Repair 8	182' S OF N TOE, 85' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
10I	LLSI CP Repair 9	190' S OF N TOE, 96' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
10J	LLSI CP Repair 10	172' S OF N TOE, 91' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
10K	LLSI CP Repair 11	134' N OF S TOE, 168' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
10M	LLSI CP Repair 12	132' N OF S TOE, 166' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
10N	LLSI CP Repair 13	51' N OF S TOE, 84.5' W OF E TOE	EE	10/19	MAW	P	10/21	10/21
10P	LLSI CP Repair 14	79' N OF S TOE, 116' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
10Q	LLSI CP Repair 15	158' S OF N TOE, 91' E OF W TOE	EE	10/19	MAW	B	10/21	10/21
10R	LLSI CP Repair 16	86' N OF S TOE, 118.5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
10S	LLSI CP Repair 17	84' N OF S TOE, 115' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
10T	LLSI CP Repair 18	66' N OF S TOE, 95' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
10W	LLSI CP Repair 19	63.5' N OF S TOE, 93' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
10X	LLSI CP Repair 20	58' N OF S TOE, 81' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
11A	LLSI CP Repair 21	62' N OF S TOE, 85' W OF E TOE	EE	10/19	MAW	P	10/21	10/21
11B	LLSI CP Repair 22	81.5' N OF S TOE, 98.5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
11C	LLSI CP Repair 23	ALONG S TOE, 18' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
11D	LLSI CP Repair 24	16' N OF S TOE, 20' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
11E	LLSI CP Repair 25	31.5' N OF S TOE, 31' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
11F	LLSI CP Repair 26	88' N OF S TOE, 38.5' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
11G	LLSI CP Repair 27	115' N OF S TOE, 34' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
11H	LLSI CP Repair 28	191' N OF S TOE, 67' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
11I	LLSI CP Repair 29	192' N OF S TOE, 19' W OF E TOE	EE	10/19	MAW	B	10/21	10/21
12A	LLSI CP Repair 30	118' S OF N TOE, 65' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12B	LLSI CP Repair 31	109' S OF N TOE, 63' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12C	LLSI CP Repair 32	115' S OF N TOE, 9' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12D	LLSI CP Repair 33	112' S OF N TOE, 4' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12E	LLSI CP Repair 34	263' W OF E TOE, 24' S OF N TOE	EE	10/20	MAW	B	10/21	10/21
12F	LLSI CP Repair 35	17' S OF N TOE, 48S E OF W TOE	EE	10/20	MAW	B	10/21	10/21
12G	LLSI CP Repair 36	4' S OF N TOE, 25' E OF W TOE	EE	10/20	MAW	B	10/21	10/21
12H	LLSI CP Repair 37	107.5' S OF W TOE, 205' E OF W TOE	EE	10/20	MAW	B	10/21	10/21
12I	LLSI CP Repair 38	81' S OF N TOE, 2' UP E SLOPE	EE	10/20	MAW	B	10/21	10/21
12J	LLSI CP Repair 39	68' S OF N TOE, 4.5' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12K	LLSI CP Repair 40	64' S OF N TOE, 3' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12M	LLSI CP Repair 41	63' S OF N TOE, 9' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12N	LLSI CP Repair 42	57' S OF N TOE, 21' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12P	LLSI CP Repair 43	57' S OF N TOE, 13.5' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12Q	LLSI CP Repair 44	57' S OF N TOE, 13.5' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12R	LLSI CP Repair 45	18' S OF N TOE, 37' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12S	LLSI CP Repair 46	1' S OF N TOE, 128' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12T	LLSI CP Repair 47	5' S OF N TOE, 82' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12W	LLSI CP Repair 48	3' S OF N TOE, 81' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
12X	LLSI CP Repair 49	2.5' S OF N TOE, 64' W OF E TOE	EE	10/20	MAW	B	10/21	10/21
13A	LLSI CP Repair 50	340' N OF S TOE, 80' E OF W TOE	EE	10/21	MAW	B	10/21	10/21

Repair Number	Compost Pond (CP) or Low-Flow Pond (LF)	Repair Location	Defect Type	Log Date 2010	CQA Monitor	Repair Type	Repair Date 2010	Test Date 2010
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13B	LLSI CP Repair 51	25' S OF N TOE, 64' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13C	LLSI CP Repair 52	25' S OF N TOE, 64' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13D	LLSI CP Repair 53	63' S OF N TOE, 4' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13E	LLSI CP Repair 54	65' S OF N TOE, 7' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13F	LLSI CP Repair 55	77' S OF N TOE, 16.5' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13G	LLSI CP Repair 56	31.5' N OF S TOE, 31' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13H	LLSI CP Repair 57	60' N OF S TOE, 87' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13I	LLSI CP Repair 58	62' N OF S TOE, 92' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13J	LLSI CP Repair 59	63' N OF S TOE, 92' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13K	LLSI CP Repair 60	31.5' N OF S TOE, 31' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13M	LLSI CP Repair 61	80' N OF S TOE, 93' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13N	LLSI CP Repair 62	82' N OF S TOE, 93' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13P	LLSI CP Repair 63	48' S OF N TOE, 16.5' W OF E TOE	EE	10/21	MAW	B	10/21	10/21
13Q	LLSI CP Repair 64	1' S OF N TOE, 128' W OF E TOE	EE	10/21	MAW	B	10/21	10/21

Notes:

Defect Type:

LLSI = Leak Location Services, Inc. found defect
 EE = Earthwork Equipment Damage
 SSP = Subgrade Sample Patch
 PR = Pipe Removed (Aerator Anchor)
 D = Installation Damage
 CR = Crease
 SUMP = Panel over New Sump
 T = Panel Intersection

Repair Type:

P = Patch
 B = Bead
 Cap = Long Patch over Seam or Cut

ATTACHMENT 4
GEOELECTRIC LEAK SURVEY REPORT

LEAK LOCATION SERVICES, INC.

16124 UNIVERSITY OAK • SAN ANTONIO, TEXAS 78249 • (210) 408-1241 / FAX (210) 408-1242

October 26, 2010

Mr. Ken Haskell
Golder Associates
1009 Enterprise Way, Suite 350
Roseville, CA 95678

Email: khaskell@golder.com

Subject: Report for “Geomembrane Leak Location Survey of Two Ponds Located at the Recology Hay Road Landfill Near Vacaville, California”;
LLSI Project 1430A

Dear Mr. Haskell:

On October 18 through October 22, 2010, Thane Hefley of Leak Location Services, Inc. (LLSI) conducted geomembrane leak location surveys of two ponds at the Recology Hay Road Landfill near Vacaville, California. The Compost Pond is single-lined with an 80-mil HDPE geomembrane and has a lined area of approximately 5 acres. It has 3:1 slopes with some sediment on the floor.

The Low Flow Pond is single-lined with a 40-mil HDPE geomembrane and has an area of approximately 22,000 square feet. It has 3:1 slopes. The ponds were surveyed using the water puddle survey method. This report documents the results of the survey.

I. RESULTS

A. Compost Pond

Sixty-four leaks were found in the bare geomembrane of the Compost Pond. Figure 1 shows the approximate locations of leaks, and Table 1 lists the approximate locations of leaks found during the survey. The leaks were repaired and the repaired areas were retested by performing a leak location survey overlapping the repairs.

B. Low Flow Pond

Forty-three leaks were found in the bare geomembrane of the pond. Figure 2 shows the approximate locations of leaks, and Table 2 lists the approximate locations of leaks found during the survey. The leaks were repaired and the repaired areas were retested by performing a leak location survey overlapping the repairs.



Since 1992

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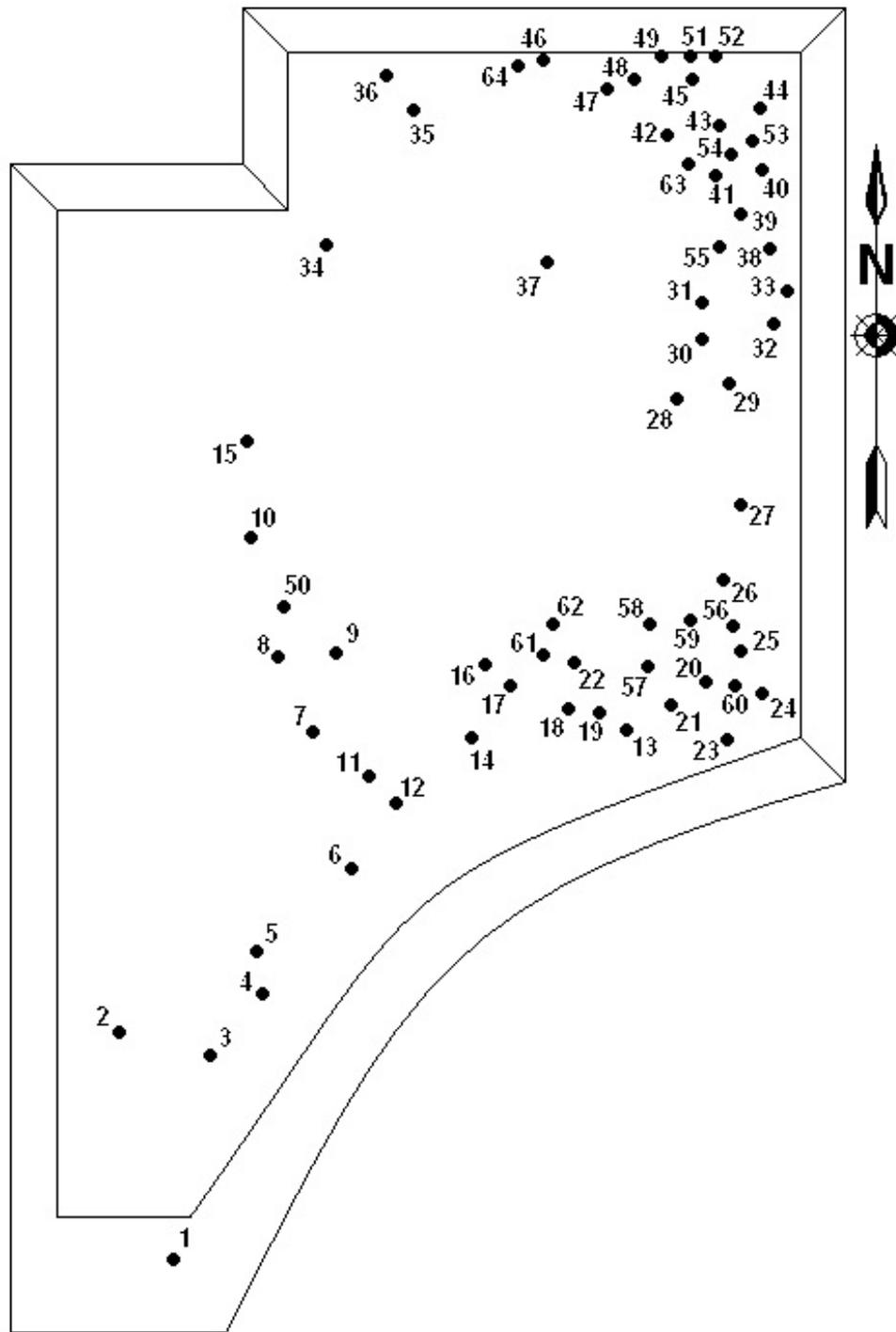


FIGURE 1. APPROXIMATE LOCATIONS OF LEAKS FOUND IN THE COMPOST POND

Table 1. Approximate Locations of Leaks Found in the Compost Pond

LEAK	LOCATION	DESCRIPTION
1	At toe on south end of pond	Hole
2	50 feet from southwest toe	0.06 needle hole
3	30 feet from southeast toe	1-inch hole
4	25 feet from south toe	1.5-inch hole
5	30 feet south toe and 8 feet from leak 4	1-inch hole
6	60 feet from south toe	1-inch hole
7	100 feet from west toe	Extrusion weld on panel
8	70 feet from west toe	1-inch hole
9	80 feet from west toe	0.5-inch hole
10	75 feet from west toe	0.06-inch hole
11	100 feet from south toe	0.5-inch hole
12	98 feet from south toe	0.5-inch hole
13	35 feet from south toe	0.75-inch hole
14	75 feet from south toe	0.5 and 0.75-inch holes
15	80 feet from west toe	1-inch hole
16	100 feet from south toe	0.5-inch hole
17	98 feet from south toe	0.75-inch hole
18	65 feet from south toe	1.5-inch hole
19	63 feet from south toe	0.25-inch hole
20	60 feet from south toe	1-inch hole
21	65 feet from south toe	Two 1-inch holes
22	80 feet from east toe	1-inch hole
23	Southeast corner near toe	0.5-inch hole

24	15 feet from south toe and 25 feet from east toe	0.75-inch hole
25	30 feet from east toe and 30 feet from south toe	Three 0.75-inch holes
26	40 feet from east toe	0.5-inch hole
27	35 feet from east toe	1-inch hole
28	60 feet from east toe	1-inch hole
29	20 feet from east toe	1-inch hole
30	66 feet from east toe	0.75-inch hole
31	65 feet from east toe	0.75-inch hole
32	8 feet from east toe	0.5-inch hole
33	4 feet from east toe	0.75-inch hole
34	18 feet from north toe	1-inch hole
35	19 feet from north toe	Unknown
36	4 feet from north toe	1-inch hole
37	150 feet from east toe	0.75-inch hole
38	Toe of northeast corner	0.25-inch hole
39	5 feet from east toe	1.5-inch hole
40	3 feet from east toe	0.5-inch hole
41	9 feet from east toe	0.5-inch hole
42	21 feet from east toe	Two 0.5-inch holes
43	14 feet from east toe	0.75-inch hole
44	5 feet from east toe	1-inch hole
45	19 feet from north toe	0.5-inch hole
46	North toe	1-inch hole
47	5 feet from north toe	0.5-inch hole
48	3 feet from north toe	0.5-inch hole
49	3 feet from north toe	0.5-inch hole

50	80 feet from north toe	Unknown
51	2 feet from north toe	Unknown
52	2 feet from north toe	Unknown
53	Toe of northeast corner	Unknown
54	Toe of northeast corner	Unknown
55	15 feet from northeast corner	Unknown
56	Southeast corner next to leak # 25	Unknown
57	Southeast corner next to leak # 21	Unknown
58	Southeast corner next to leak # 18 and 19	Unknown
59	Southeast corner next to leak # 18 and 19	Unknown
60	Southeast corner next to leak # 25	Unknown
61	80 feet from southeast slope next to leak # 22	Unknown
62	80 feet from southeast slope next to leak # 22	Unknown
63	Toe of northeast corner	Unknown
64	Toe of north slope	Unknown

C. Leak Detection Sensitivity Tests

The water puddle survey equipment and survey procedures were periodically tested for leak detection. The tests were performed using a 1-mm hole placed in a scrap piece of geomembrane. The operation of the leak location equipment was verified by being able to detect the leak. This procedure was successfully conducted at the beginning, during, and end of each day of survey.

II. PRINCIPLE OF THE ELECTRICAL SURVEY METHOD

A. General

The electrical leak location method detects electrical paths through the liner caused by water or moisture in holes through the liner. A voltage is connected to one electrode placed in the water covering the liner and a ground electrode connected to earth ground. Electrical current flowing through the leaks in the liner produces localized anomalous areas of high current density near the leaks. These areas are located by making electrical potential measurement scans in the water on the geomembrane.

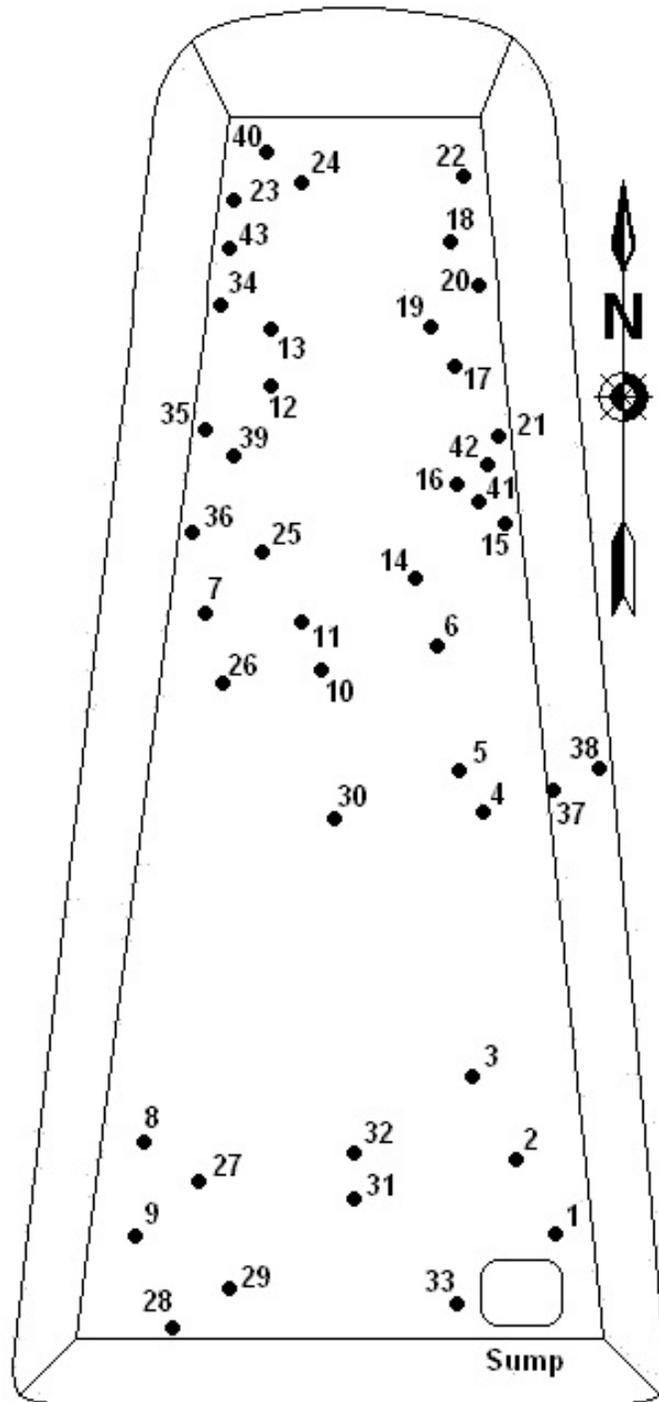


FIGURE 2. APPROXIMATE LOCATIONS OF LEAKS FOUND IN THE LOW FLOW POND

Table 2. Approximate Locations of Leaks Found in the Low Flow Pond

LEAK	LOCATION	DESCRIPTION
1	8 feet from south toe	1-inch hole
2	6 feet from east toe	1.5-inch hole
3	16 feet from east toe	1-inch hole
4	4 feet from east toe	0.75-inch hole
5	5 feet from east toe	1-inch hole
6	4 feet from east toe	0.75-inch hole
7	7 feet from east toe	Extrusion weld
8	6 feet from west toe	0.75-inch hole
9	8 feet from west toe	1-inch hole
10	12 feet from west toe and 20 feet from east toe	0.25-inch hole
11	12 feet from west toe and 18 feet from east toe	1-inch tear
12	8 feet from west toe and 14 feet from east toe	1-inch hole
13	8 feet from west toe and 12 feet from east toe	Extrusion weld
14	6 feet from east toe	0.25-inch hole
15	East toe	1-inch hole
16	6 feet from east toe	0.5-inch hole
17	3 feet from toe on northeast corner	0.25-inch hole
18	2 feet from east toe	0.25-inch hole
19	3 feet from east toe	0.75-inch hole
20	Toe of northeast corner	0.75-inch hole
21	Toe of northeast corner	0.75-inch hole
22	Toe of northeast corner	0.5-inch hole
23	Northwest corner	Extrusion weld

24	Toe of north slope	0.25-hole
25	12 feet from west toe and 16 feet from east toe	0.25-inch hole
26	8 feet from west toe and 21 feet from east toe	1-inch hole
27	12 feet from west toe	0.5-inch hole
28	Toe of southwest corner	0.06-inch hole
29	4 feet from south toe	0.06-tear
30	17 feet from west toe and 21 feet from east toe	0.75-inch hole
31	14 feet from south toe	0.75-inch hole
32	18 feet from south toe	1.5-inch hole
33	Toe of southeast corner	0.75-inch hole
34	Toe of northwest corner	0.06-inch hole
35	Toe of northwest corner	2-inch hole
36	Toe of northwest corner	0.75-inch hole
37	Midway of east slope	Unknown
38	Top of east slope	Unknown
39	Northwest corner next to leak # 35	Unknown
40	Northwest corner next to leak # 24	Unknown
41	Toe of east side of pond next to leak # 15 and 16	0.5-inch hole
42	Toe of east side of pond next to leak # 15 and 16	1-inch hole
43	Northwest corner next to leak # 23	0.75-inch hole

B. Bare Geomembrane Survey

One variation of the electrical method is the water puddle test for bare geomembranes. This method detects electrical current flowing through holes in the geomembrane using a small amount of water that is put in contact with the liner. A squeegee is used to push the water over the liner. A low voltage electrical supply is connected to earth ground and to the leak detector. When a hole in the liner is encountered, electrical current will flow through water in the leak contacting earth ground.

The current is monitored using an electronic detector that converts the increase in the current to an audible tone indication. This method does not require the liner to be flooded with water. However, the liner under test must be in contact with the supporting sub-grade. Therefore, the surveys are usually conducted at night or early morning when wrinkles are minimized.

If there are any questions regarding the electrical survey or this report, please contact us at (210) 408-1241. We appreciate the opportunity to have been of service to Golder Associates.

Very truly yours,



German Flores
Project Manager

Approved by:



Glenn T. Darilek
Principal Engineer